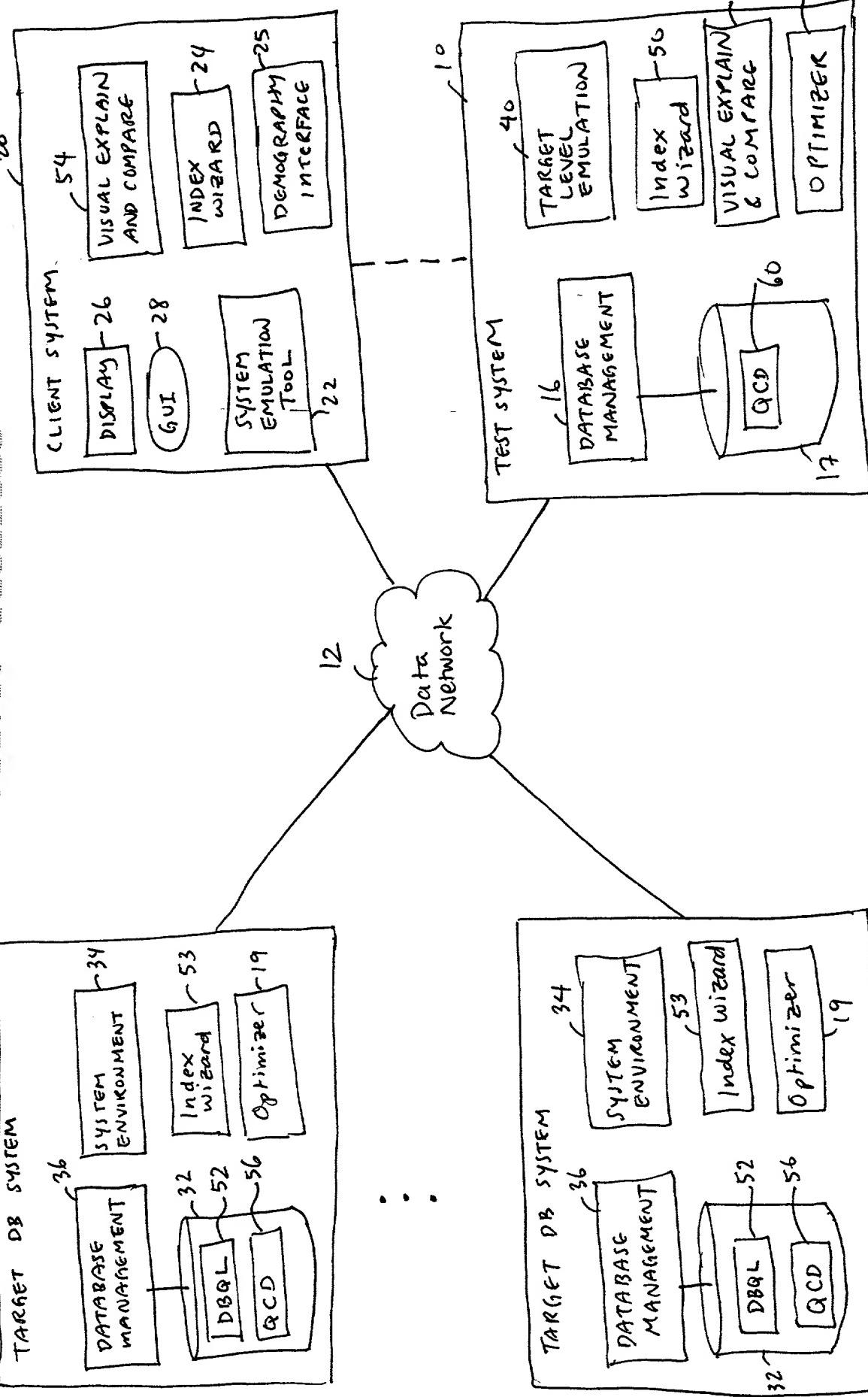


F16. 1

20



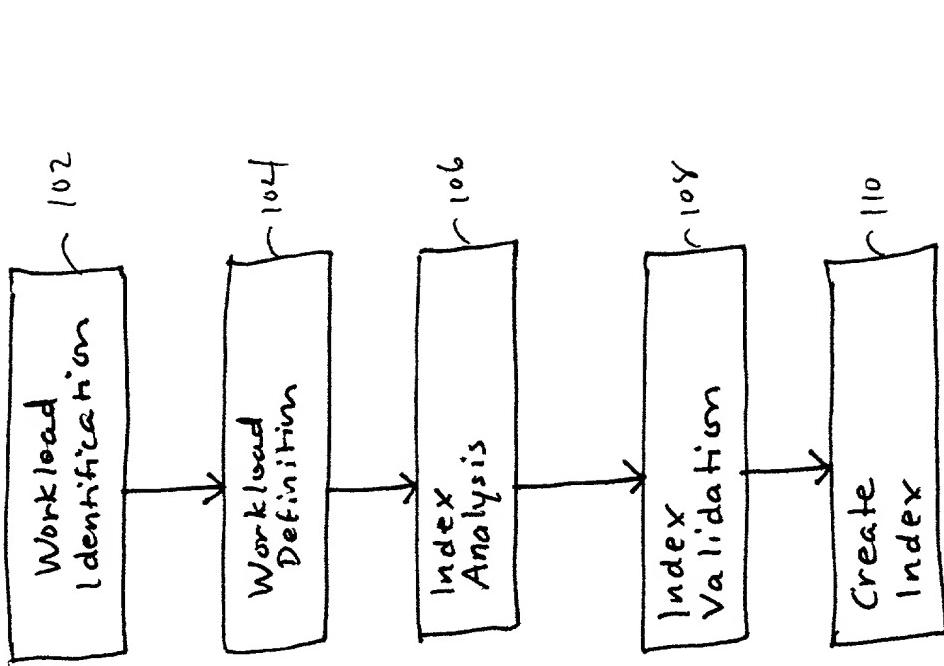


FIG. 2

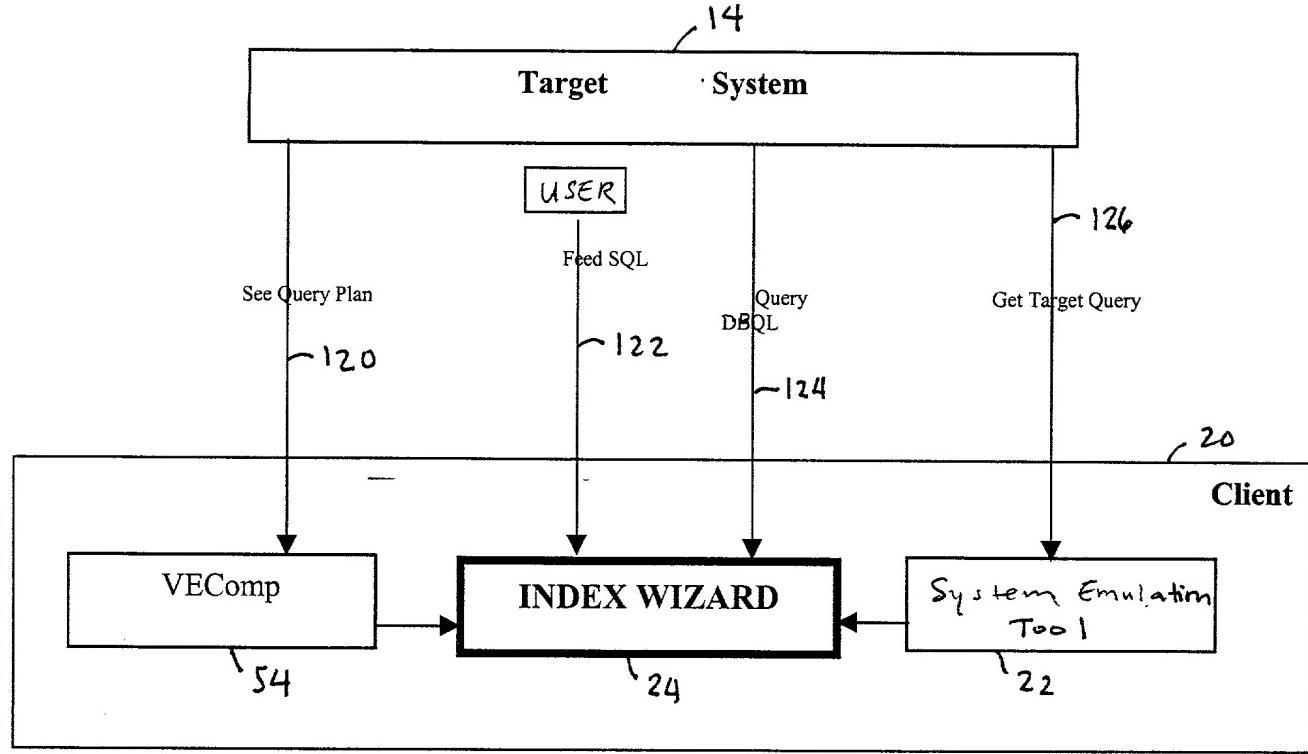


FIG. 3

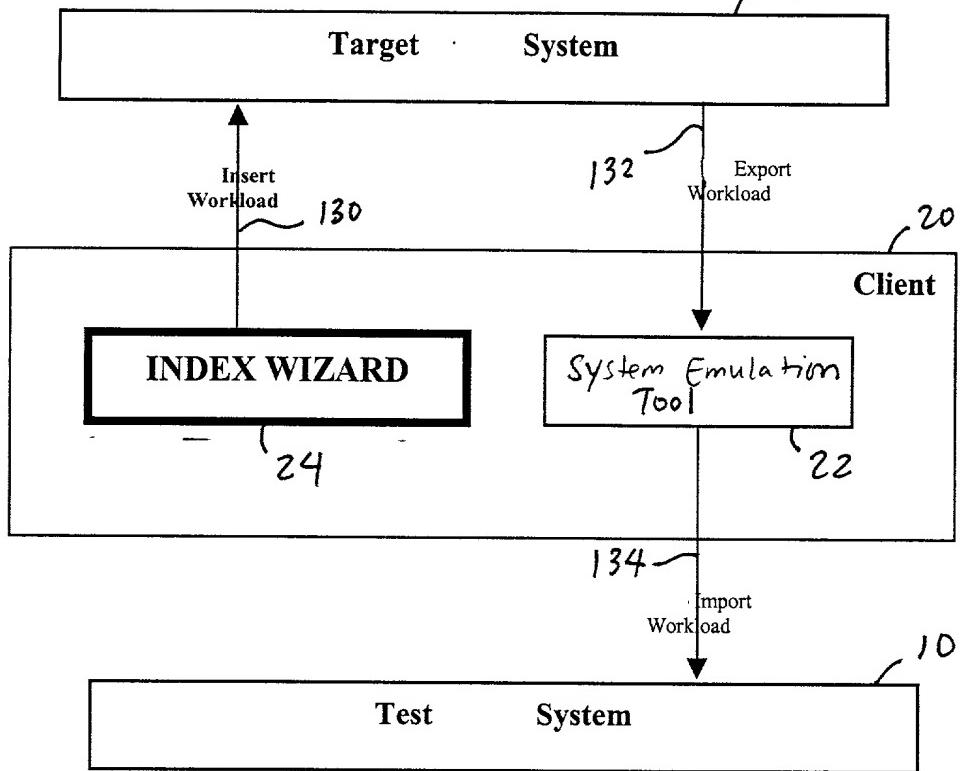
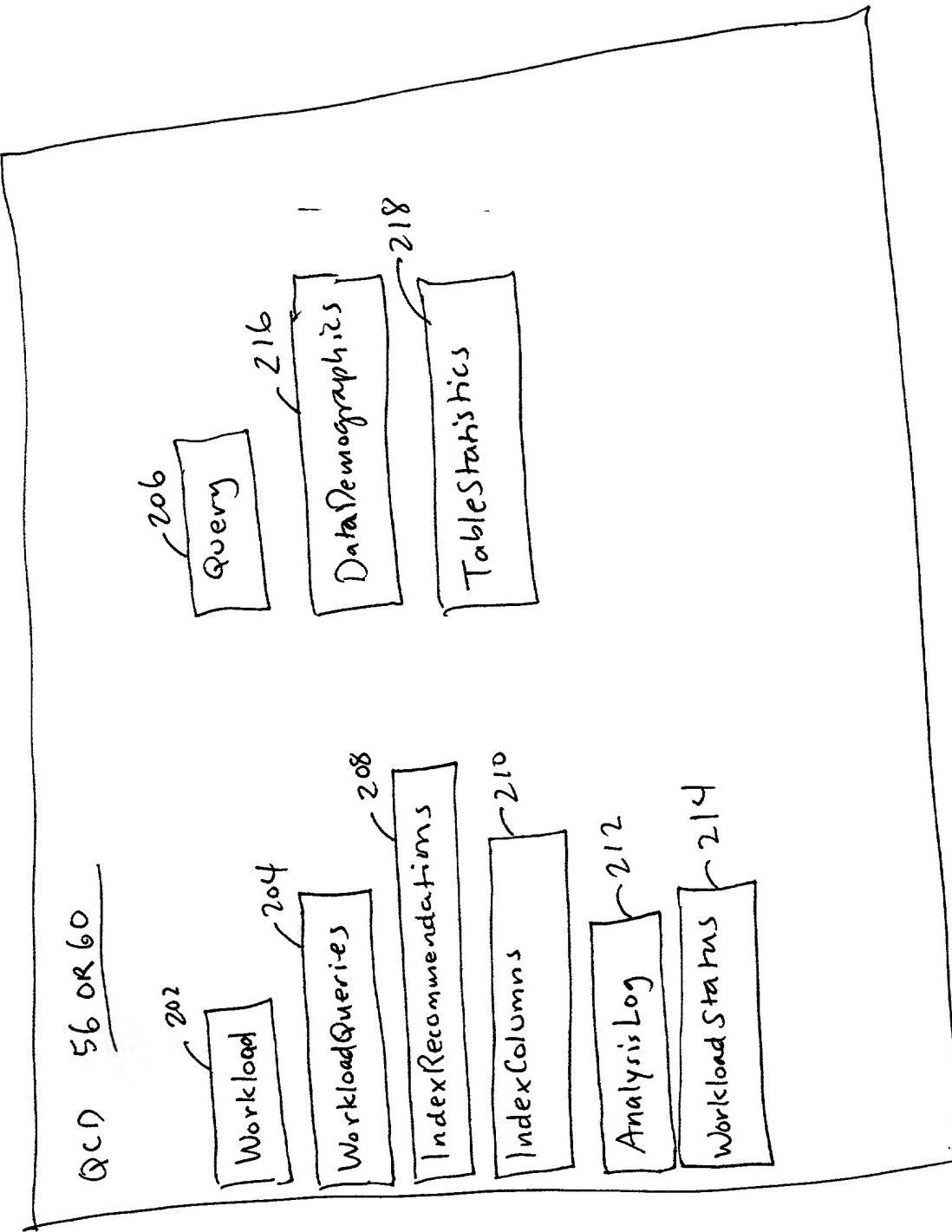


FIG. 4



P169, 5

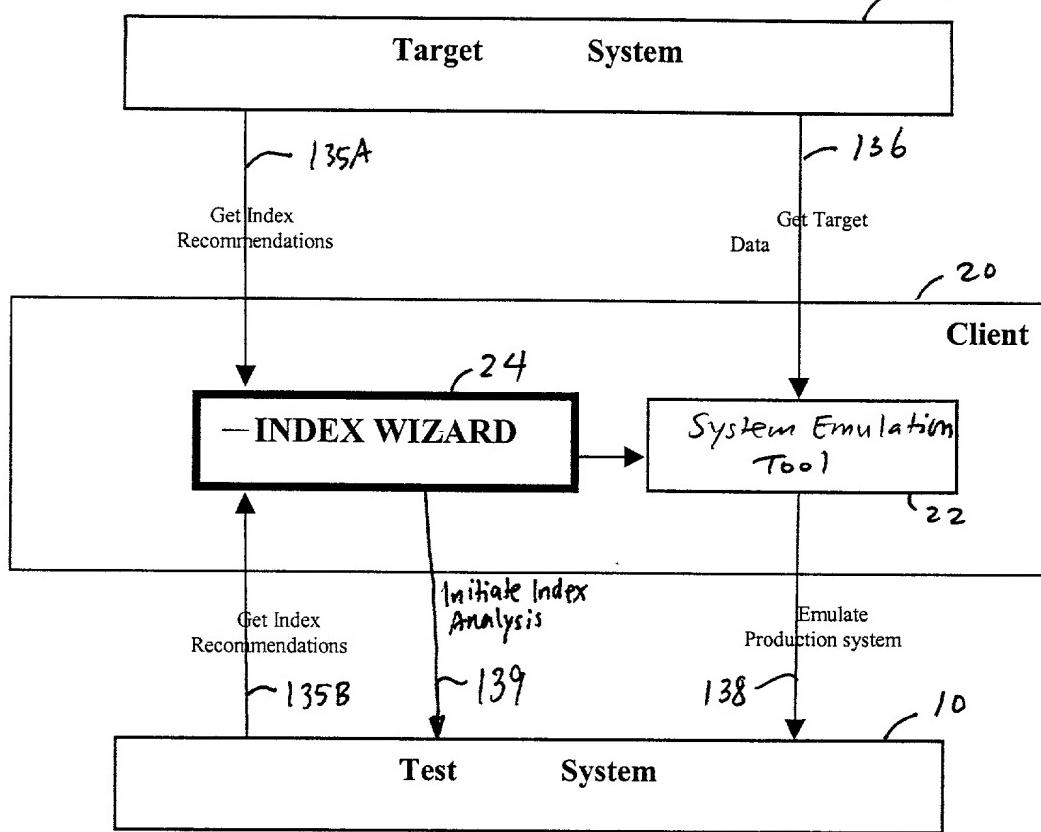
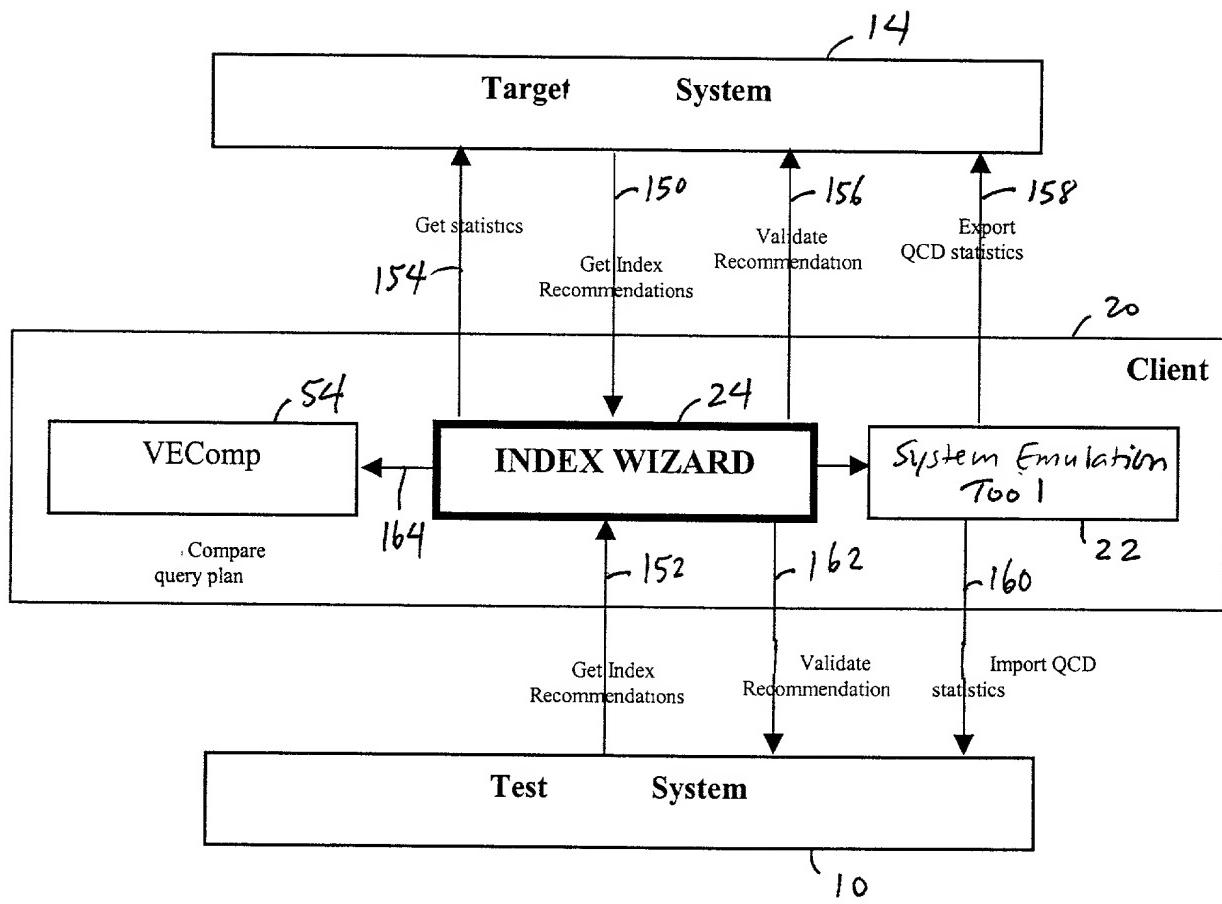


FIG. 6



F16, 7

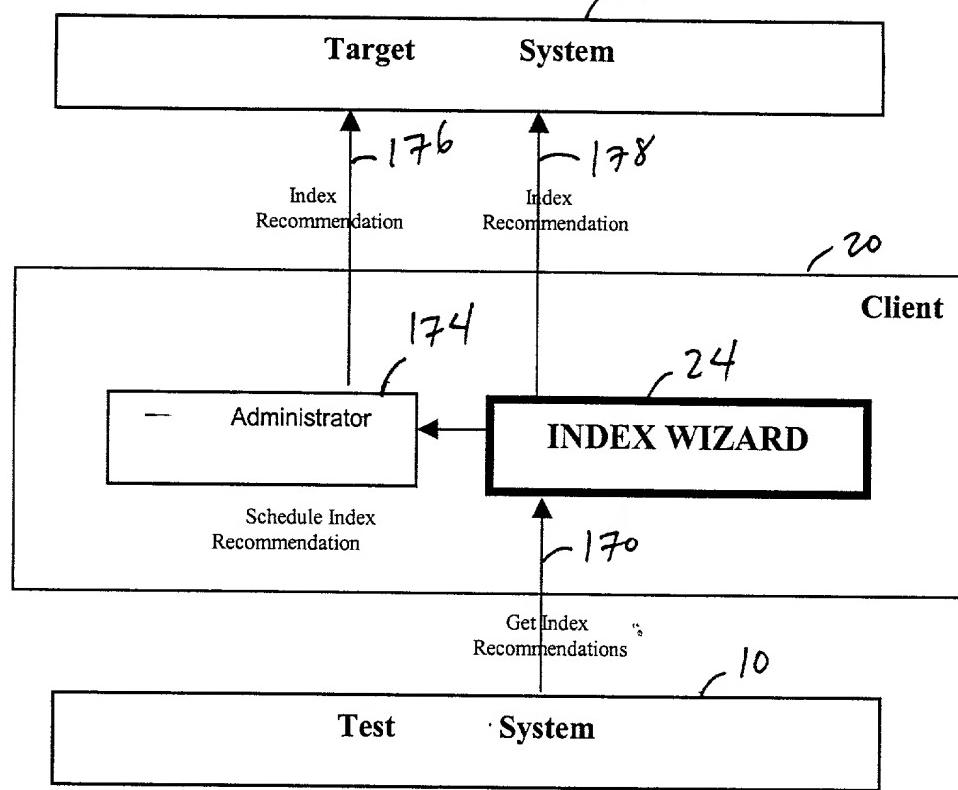


Fig. 8

DB SYSTEM 300

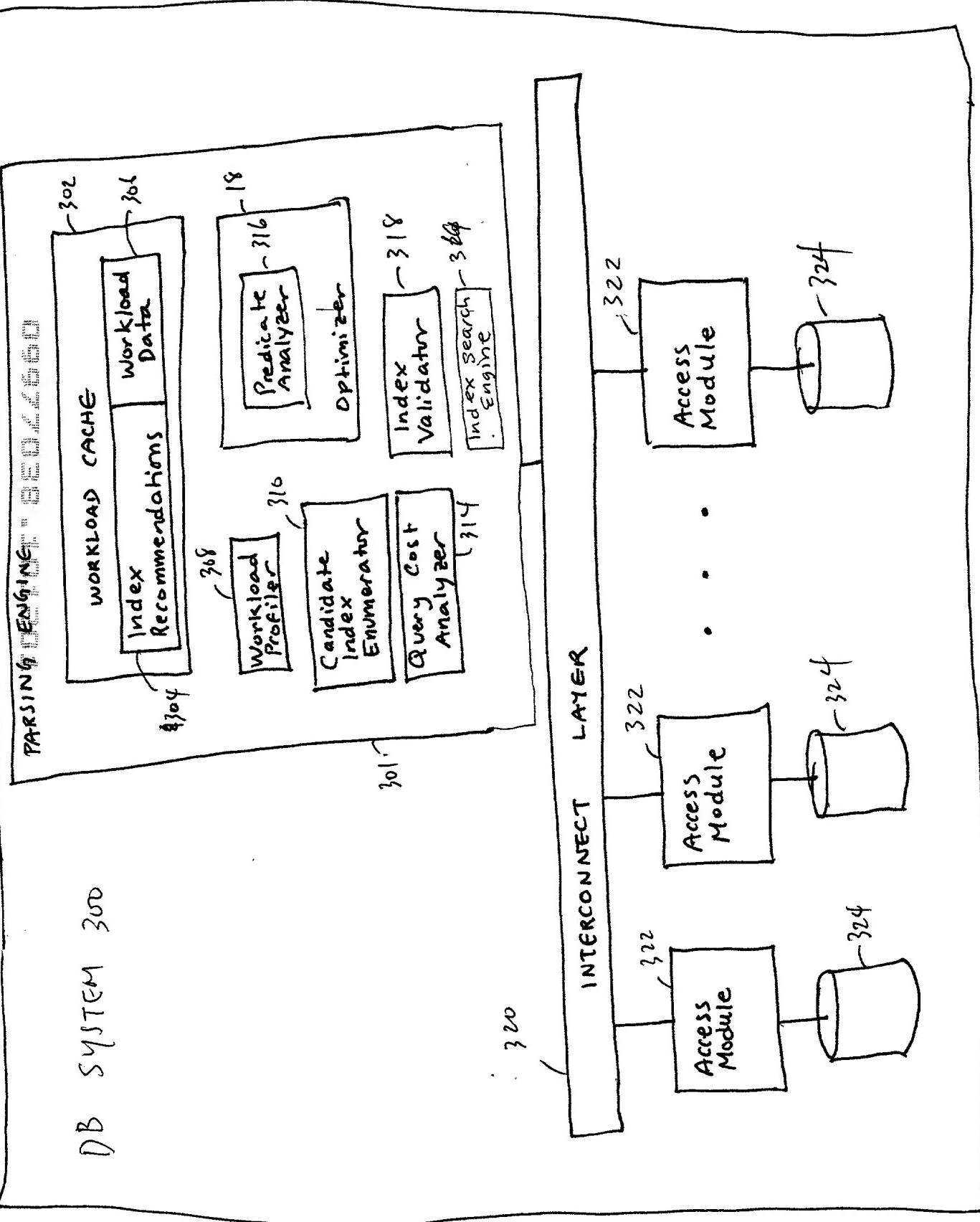
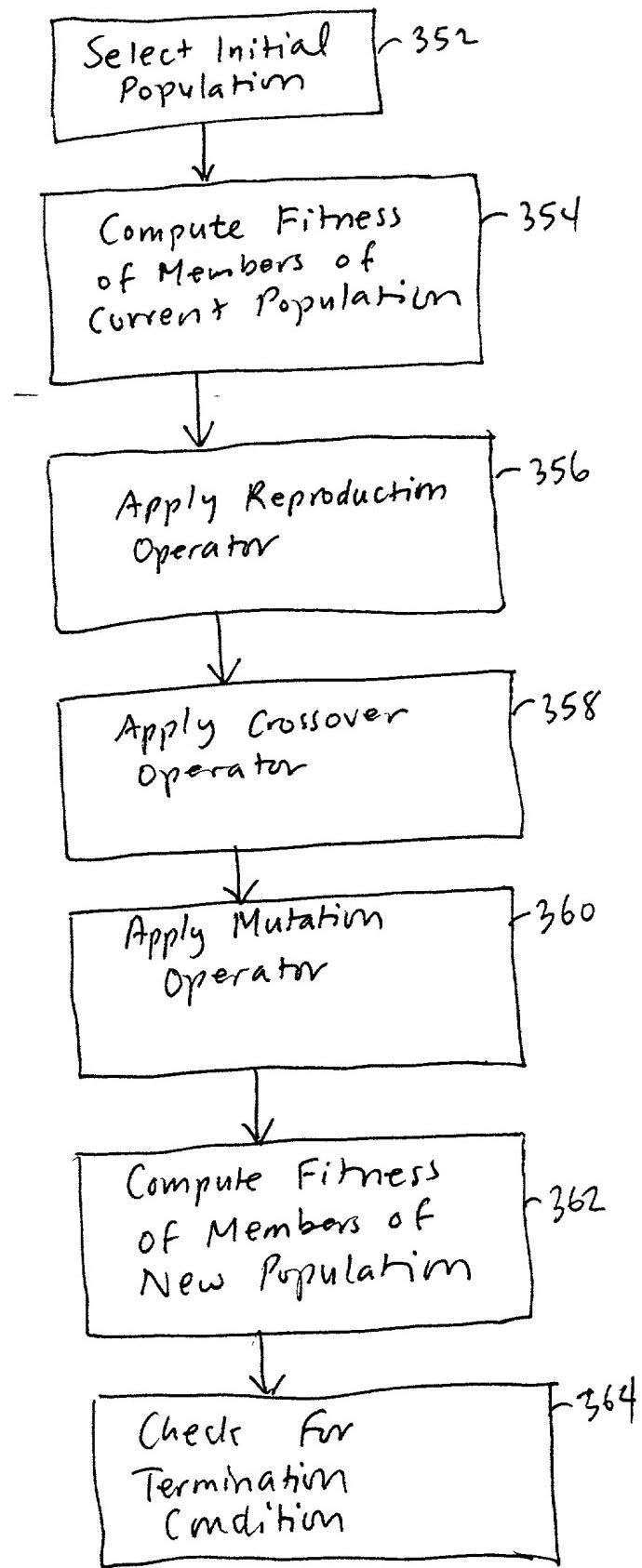


FIG. 9

FIG. 10



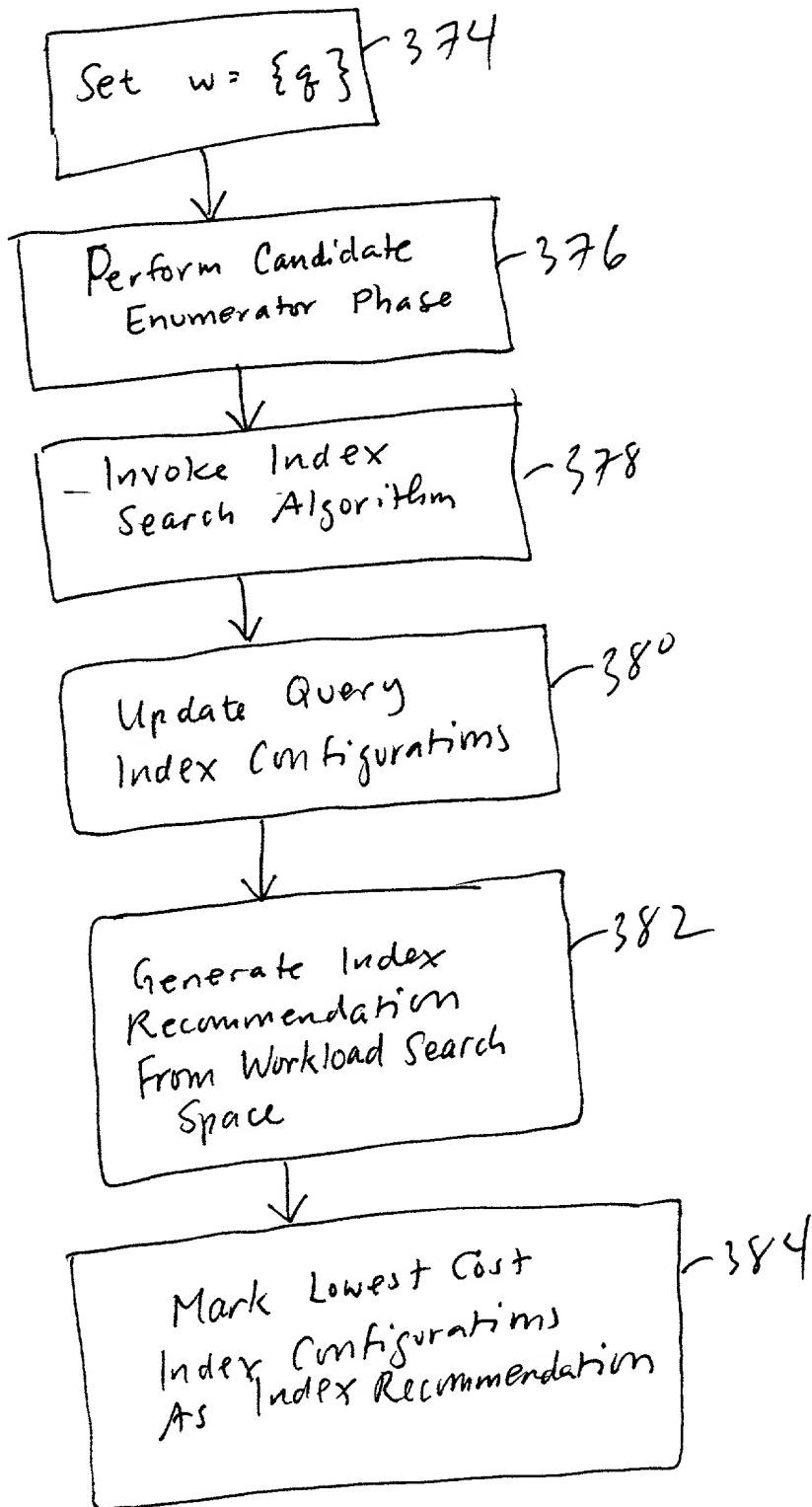
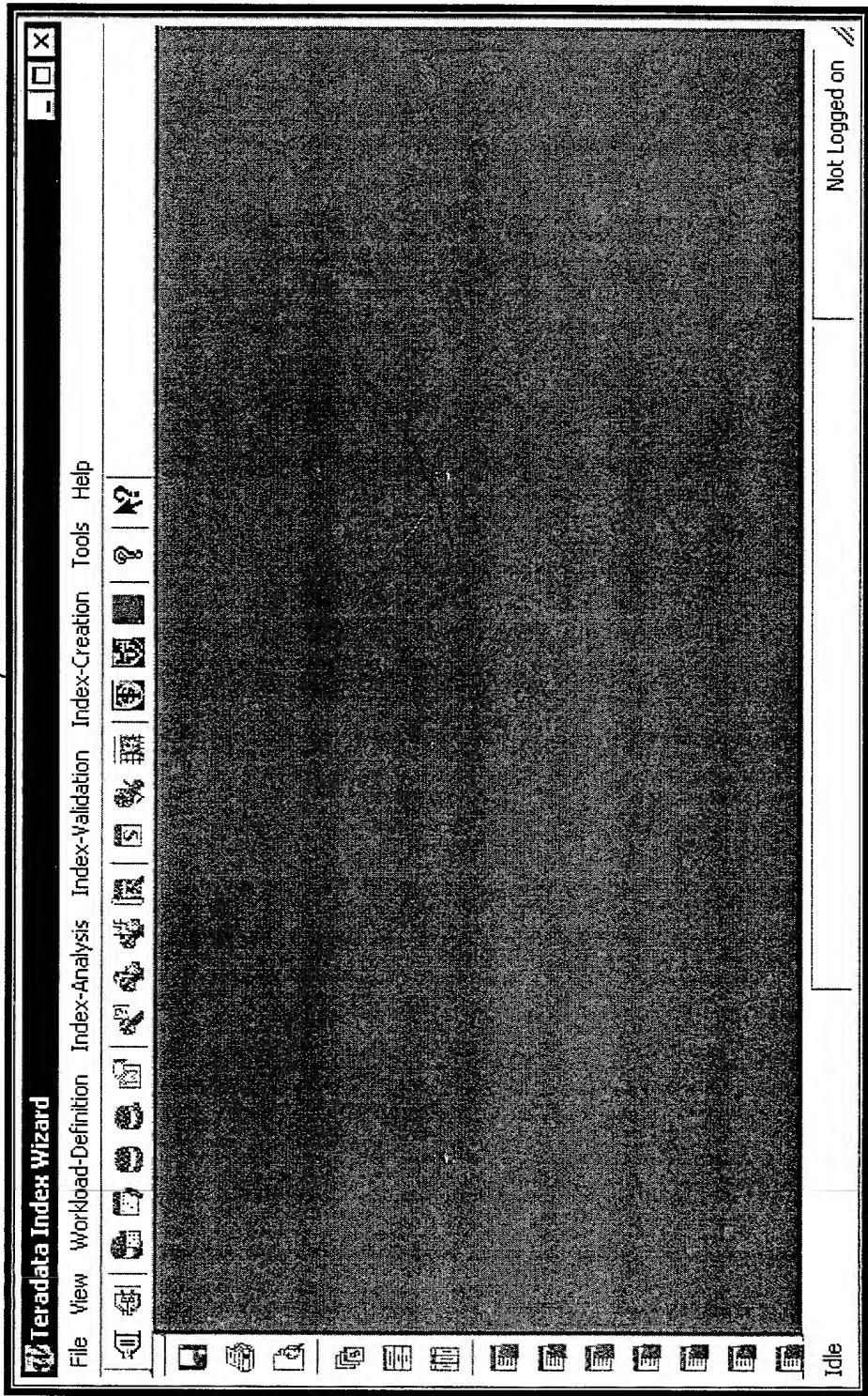


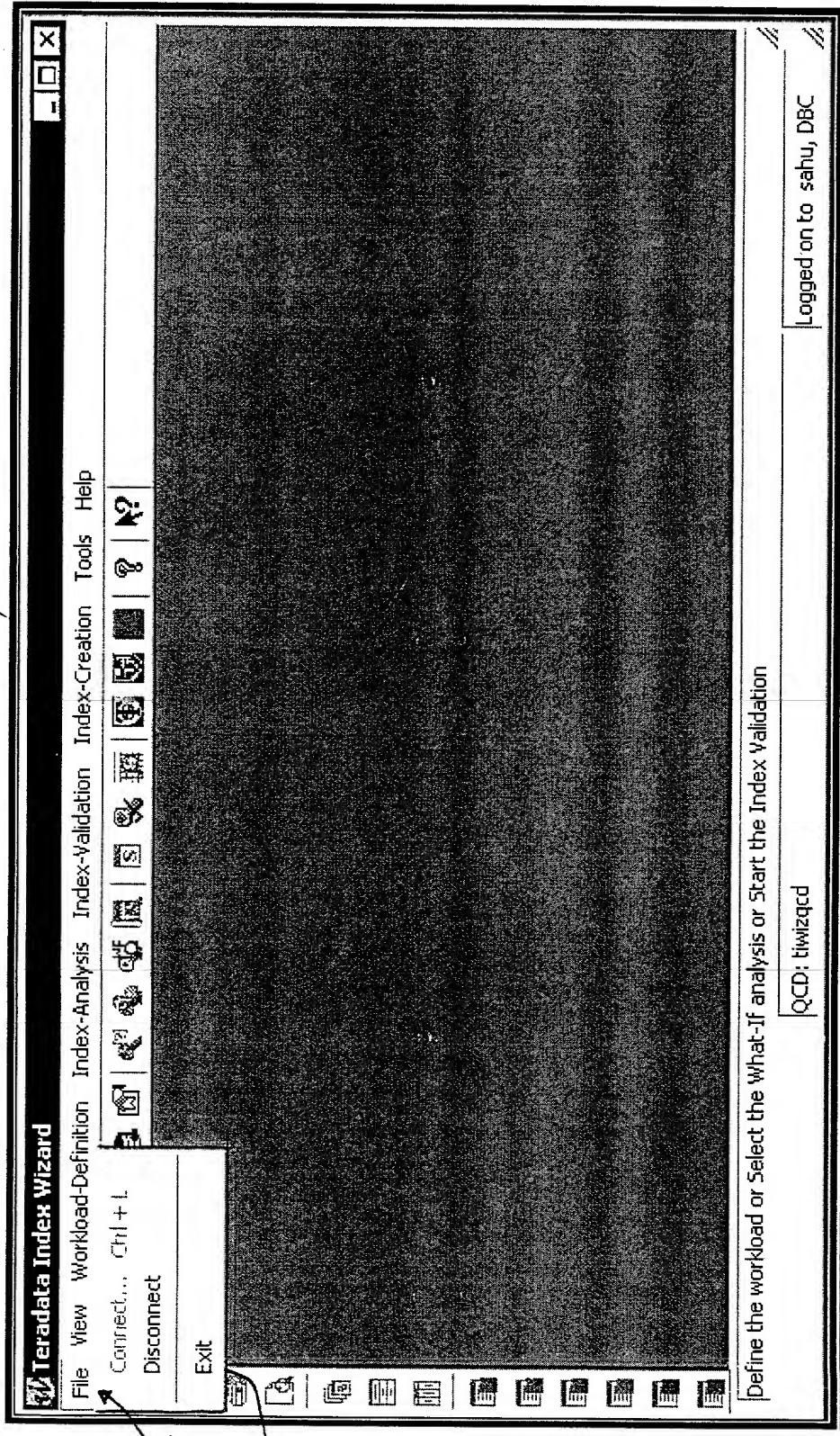
Fig. 11

F16.

12



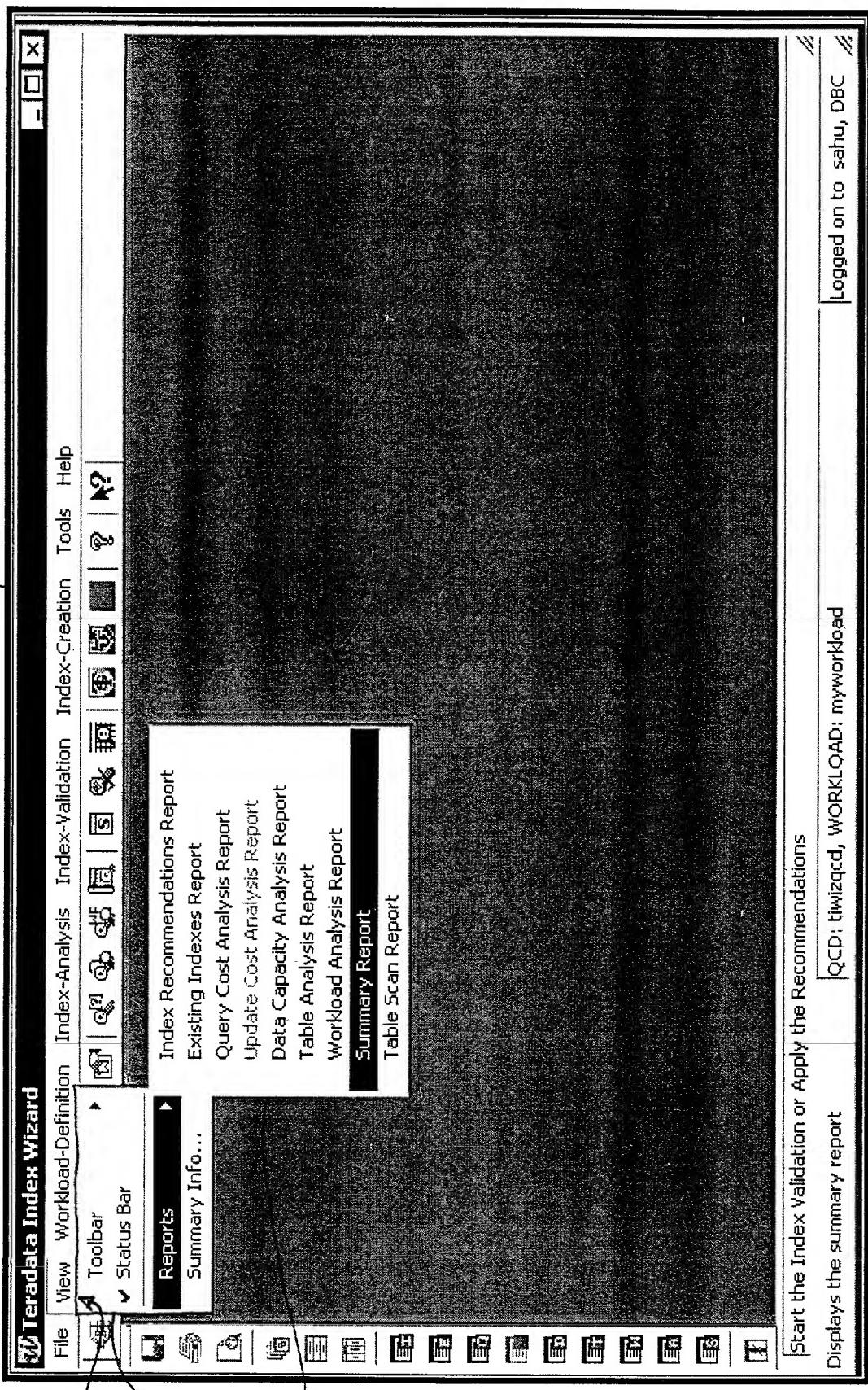
406



402
404

F16.

13



410
411
412
413

Start the Index Validation or Apply the Recommendations

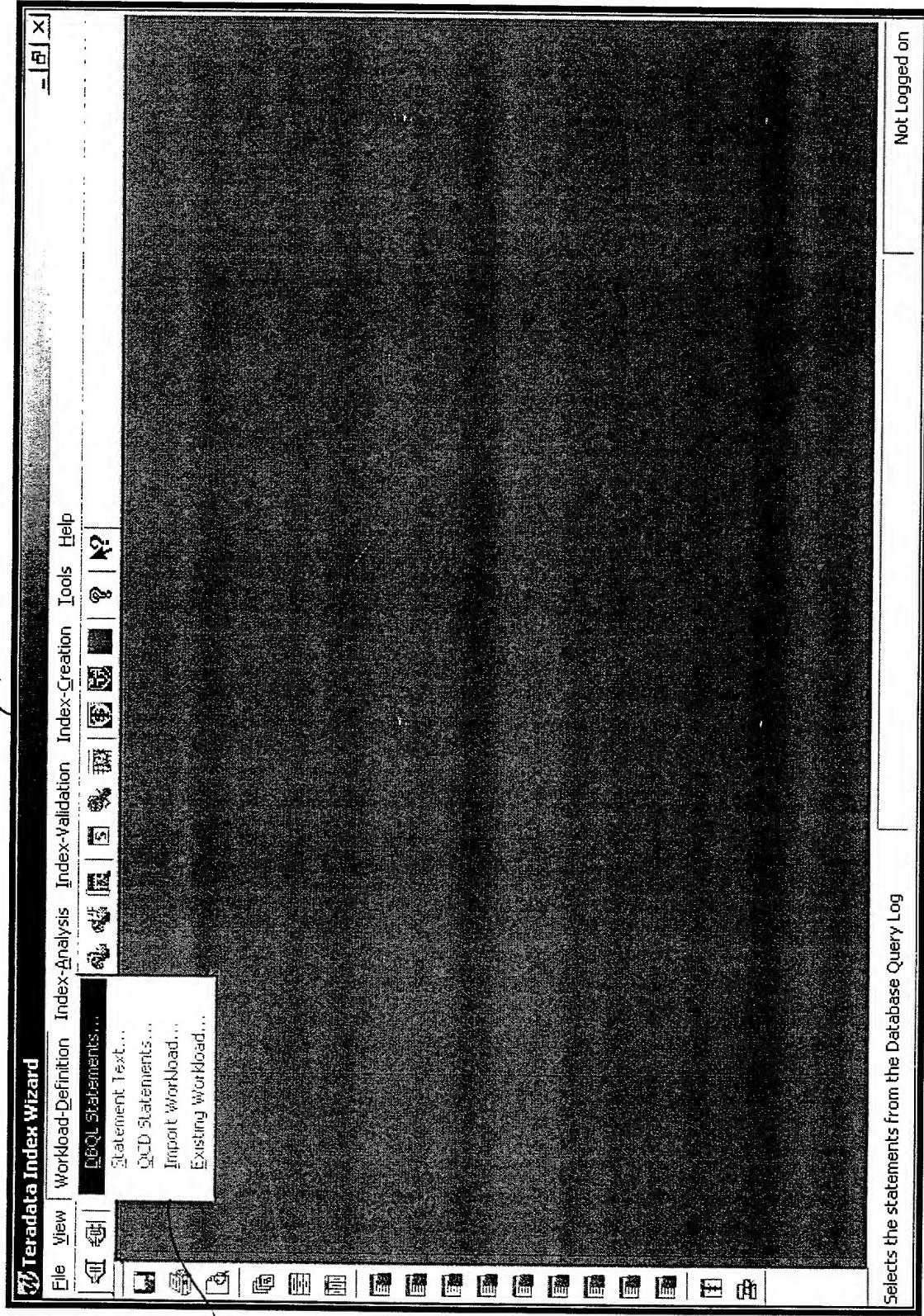
Displays the summary report

QCD: twizqcd, WORKLOAD: myworkload

Logged on to sahu, DBC

El 6.
14

420



422

F16. 15

432
↓ 430

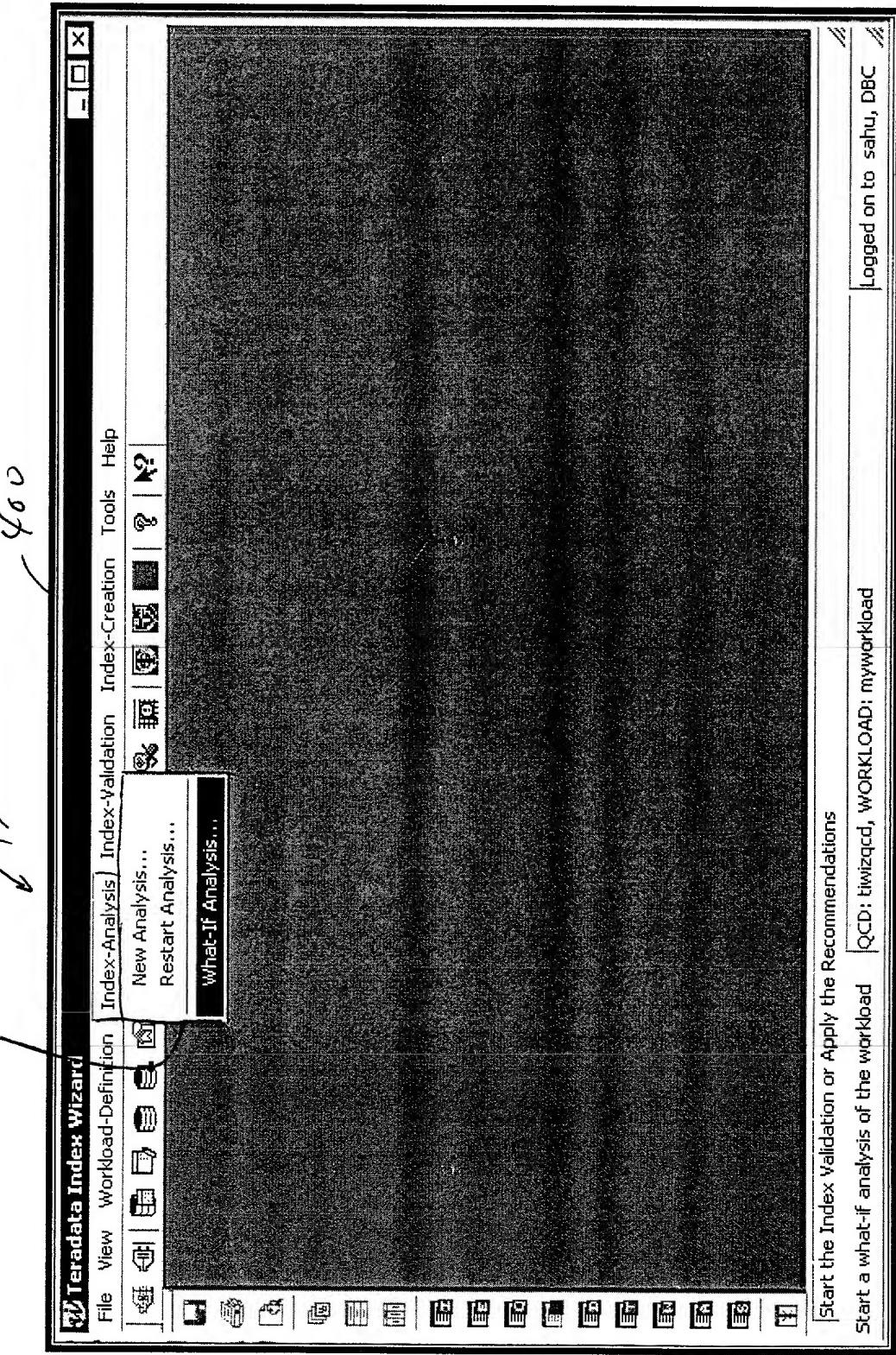
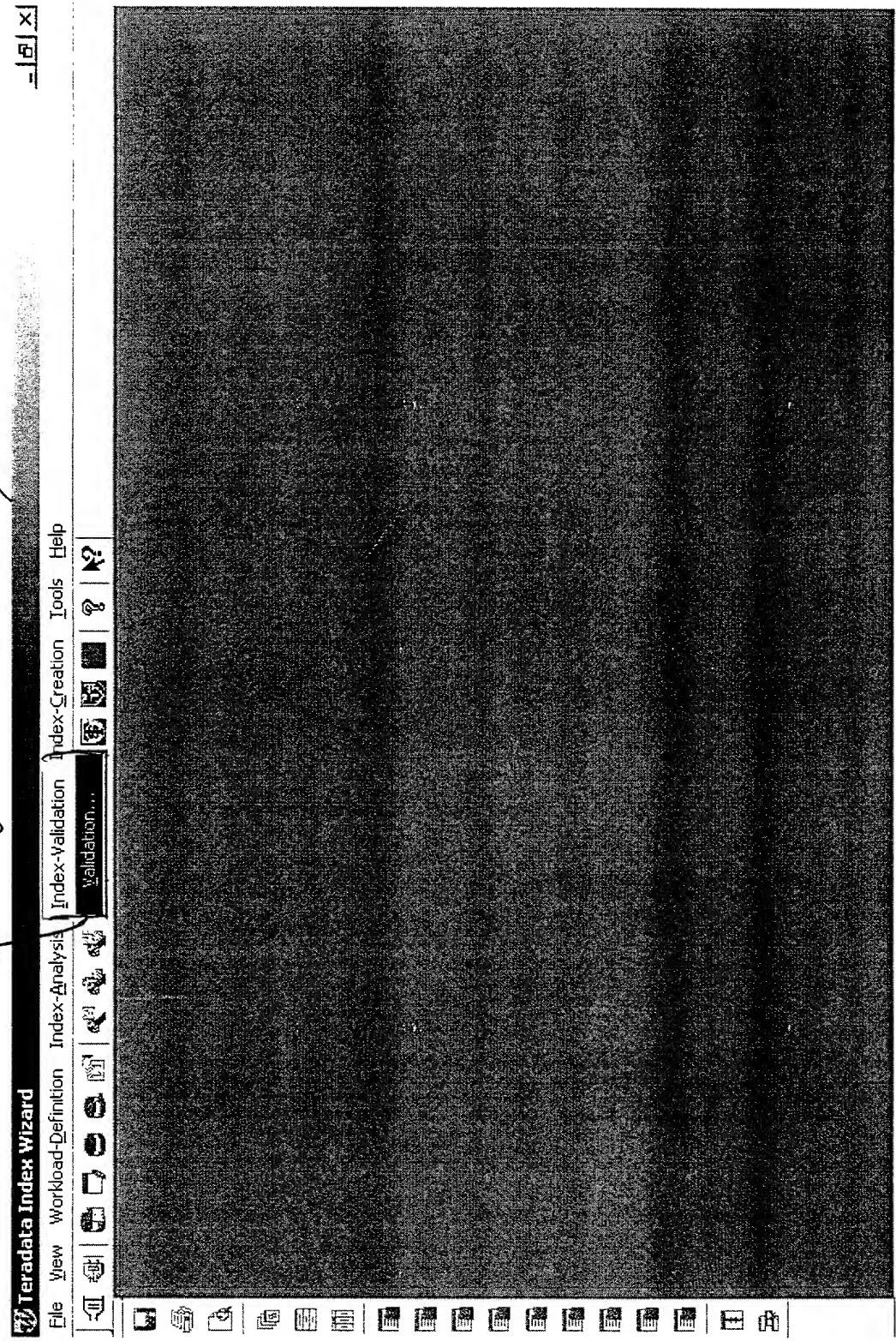


Fig. 16.

442 446 450 454

458

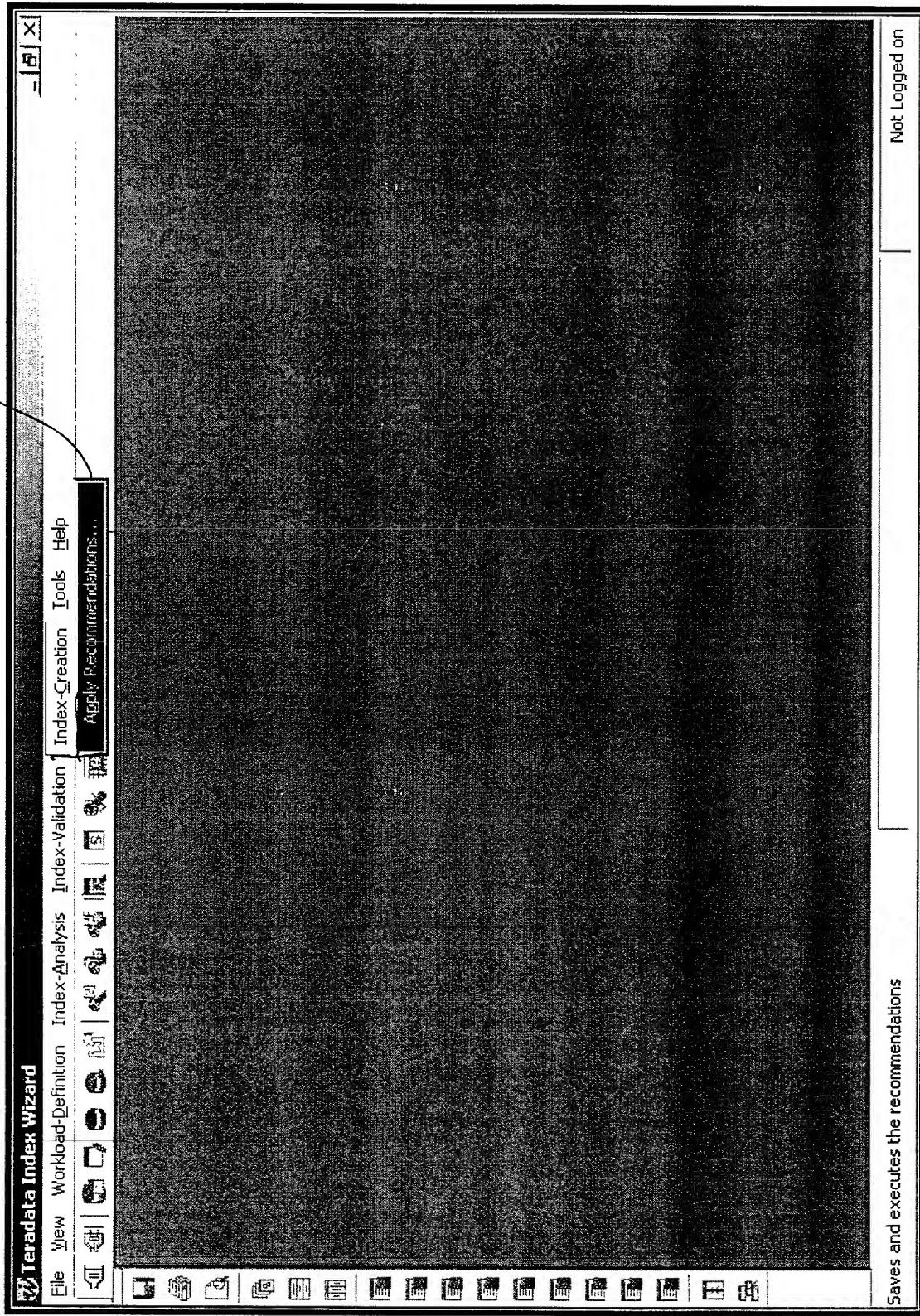


Not Logged on

Validates the indexes

Fig. 16. 17

450 452



F16.

18

460 462 464 466

✓ 460

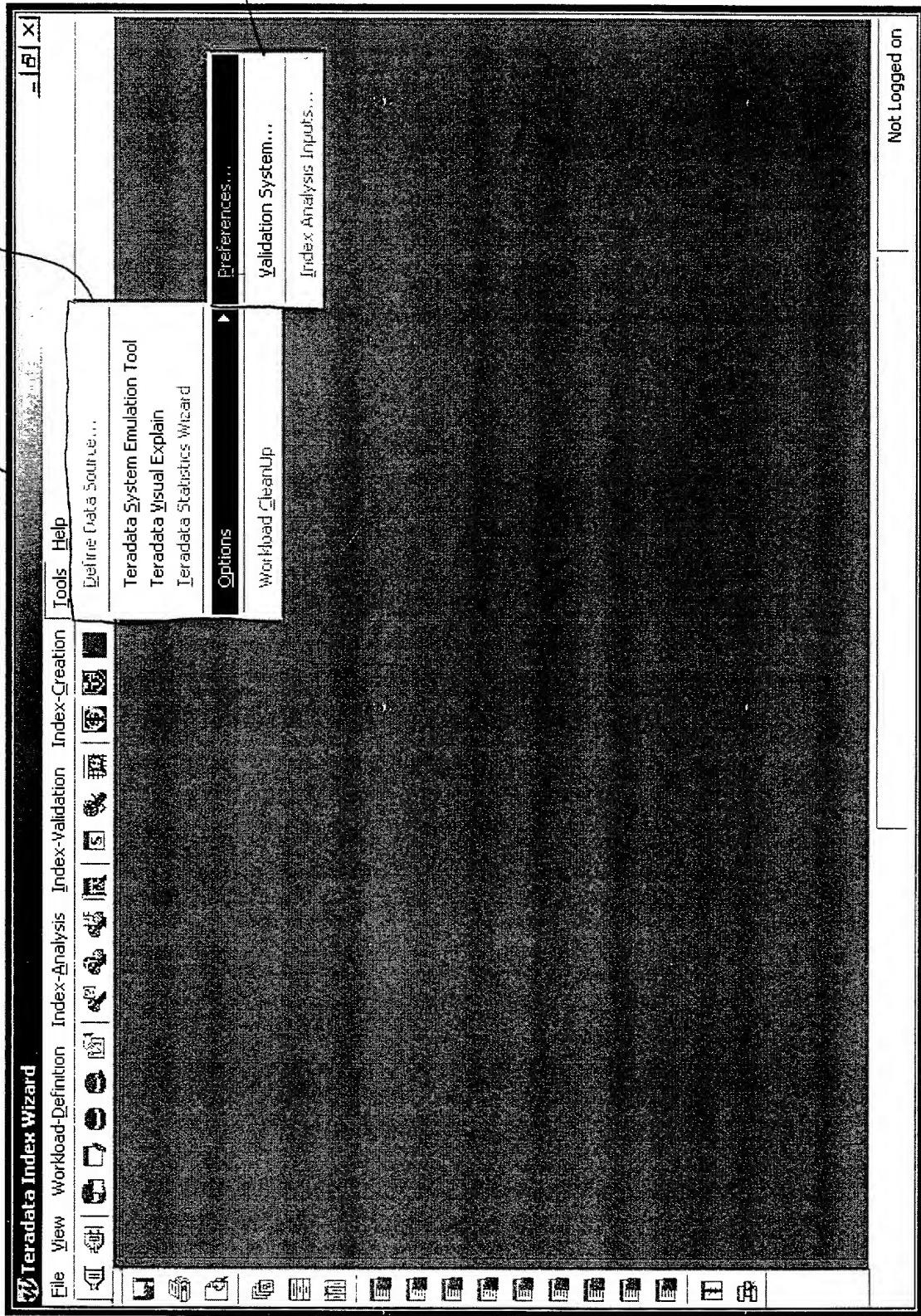


Fig. 19

	Icon	Description
800-350		To logon to the Teradata RDBMS server.
801-352		To log off from the Teradata RDBMS server.
802-354		To select the statements from the DBQL.
803		To enter the SQL statements or select them from more than one file.
804		To select the SQL statements from the QCD.
805		To import a workload from a production system.
806		To select an existing workload.
807		To set/reset the index analysis parameters.
808		To start index analysis.
809		To perform "What-If" analysis.
810		To restart index analysis from a checkpoint.
811		To display summary information.
812		To validate the indexes.
813		To schedule the creation of indexes.
814		To view the help contents.
815		To guide the user how to use help.

800-350
 801-352
 802-354
 803
 804
 805
 806
 807
 808
 809
 810
 811
 812
 813
 814
 815

F16. 20

Define Workload

DBQL Search Criteria

User Name:	Account Name:
Start Time:	End Time:
I/O Count:	Frequency:

Statement Text:

500

501 X

502

503

DBQL Statements

Selected	Frequency	Statement Text
1	1	Statement Text

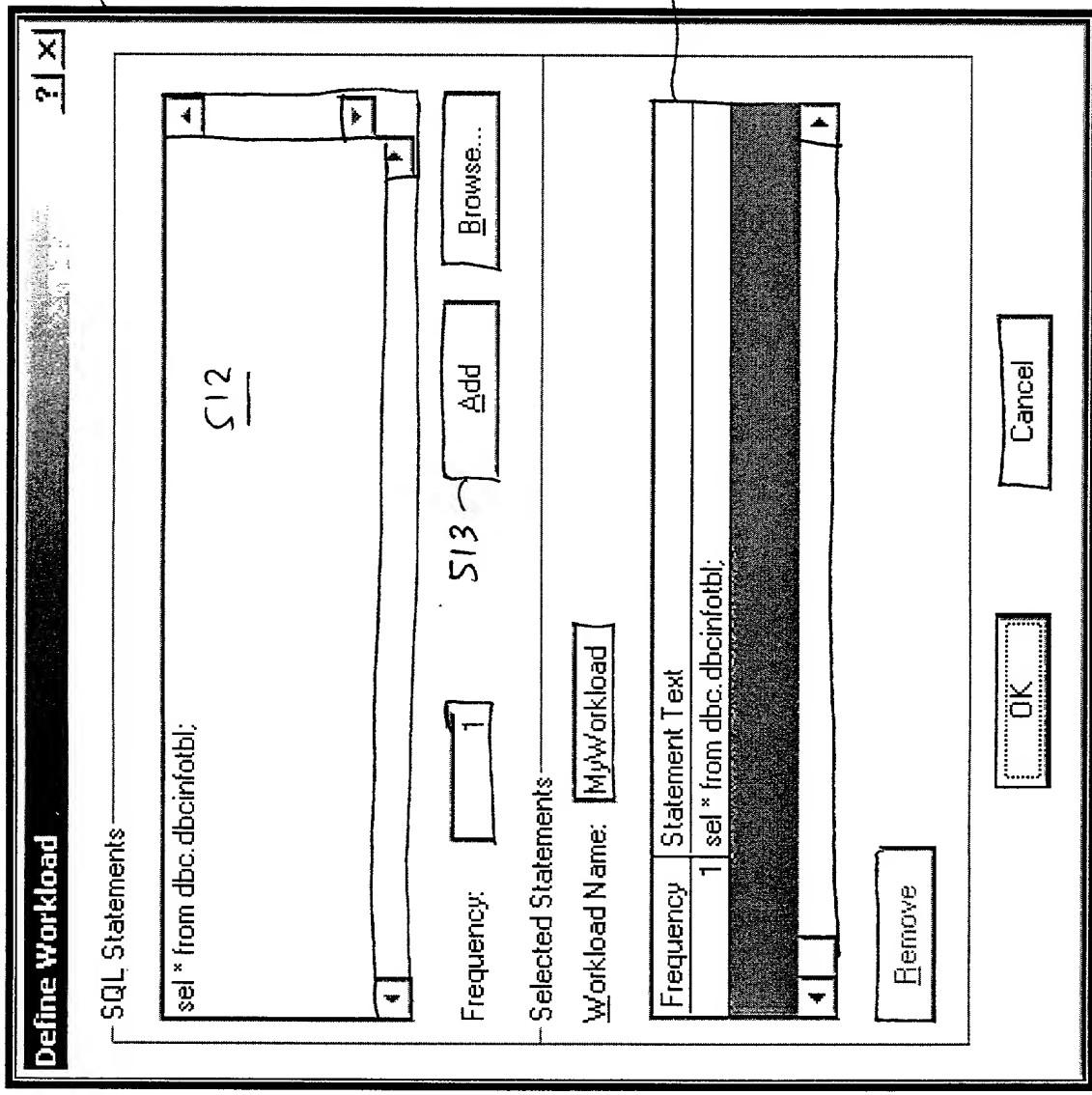
Browse DBQL

Workload Name:

Select All Deselect All

OK Cancel

F16. . - 21



— 510

— 514

F1 G.
22

Define Workload

QCD Statements Query ID: Query Tag: Browse QCD

TlWizQCD

Select	Query	Frequ	Statement Text
<input checked="" type="checkbox"/>	19	1	Insert explain into tlwizqcd sel * from query,rel
<input checked="" type="checkbox"/>	17	1	Insert explain into tlwizqcd sel * from query...
<input type="checkbox"/>	15	1	sel * from query,relation where query.queryid =
<input checked="" type="checkbox"/>	13	1	sel * from query,relation where query.queryid =
<input type="checkbox"/>	32	1	sel * from query,relation where relation.relation
<input checked="" type="checkbox"/>	11	1	sel * from query,relation where query.queryid =
<input checked="" type="checkbox"/>	9	1	sel * from query,relation ,workload where query
<input type="checkbox"/>	30	1	sel * from query...
<input type="checkbox"/>	28	1	Insert explain into TlWizQCD sel * from relation
<input type="checkbox"/>	1	1	

Workload Name: MyWorkload Select All Deselect All

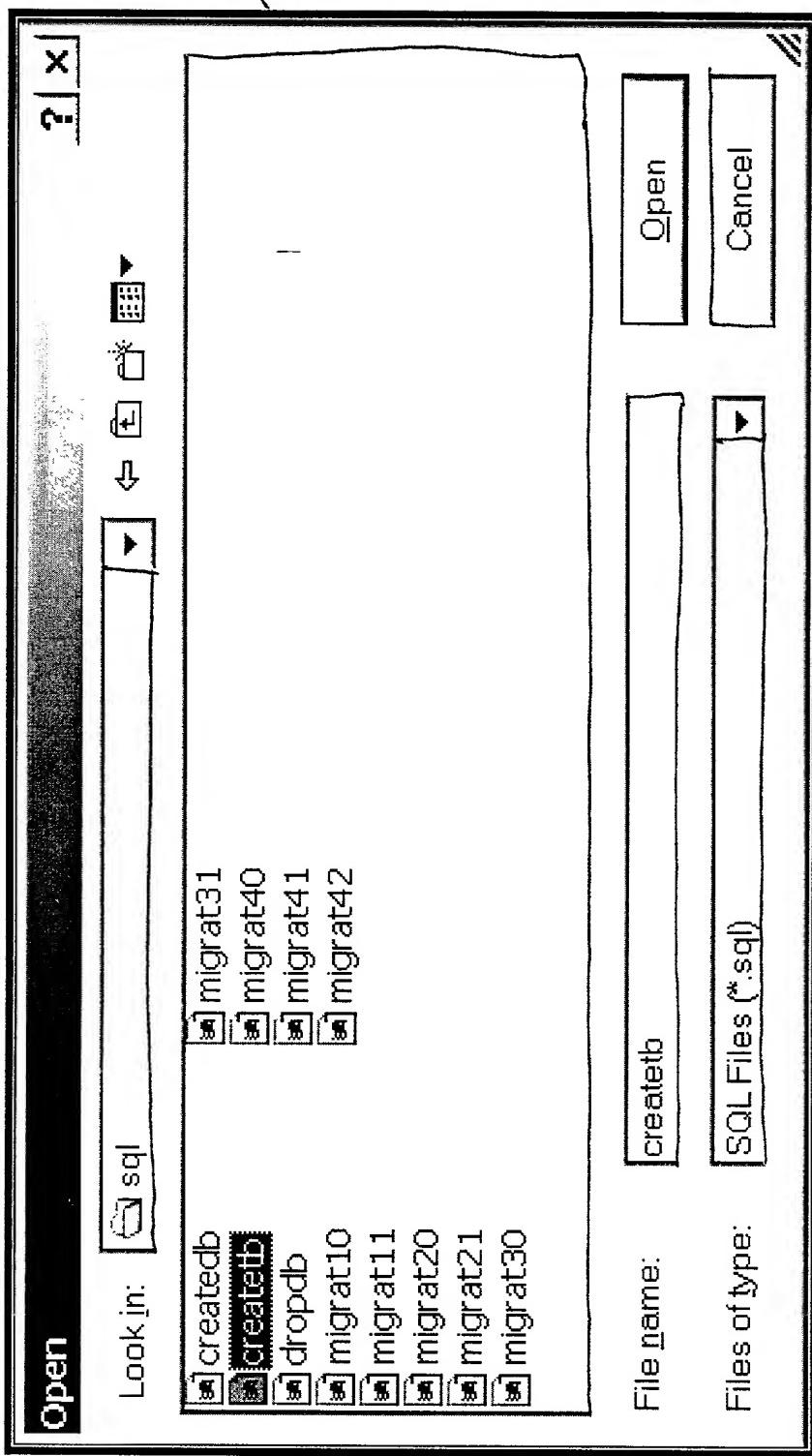
OK Cancel

— S20

— S24

Fig.

23



24

Fig.

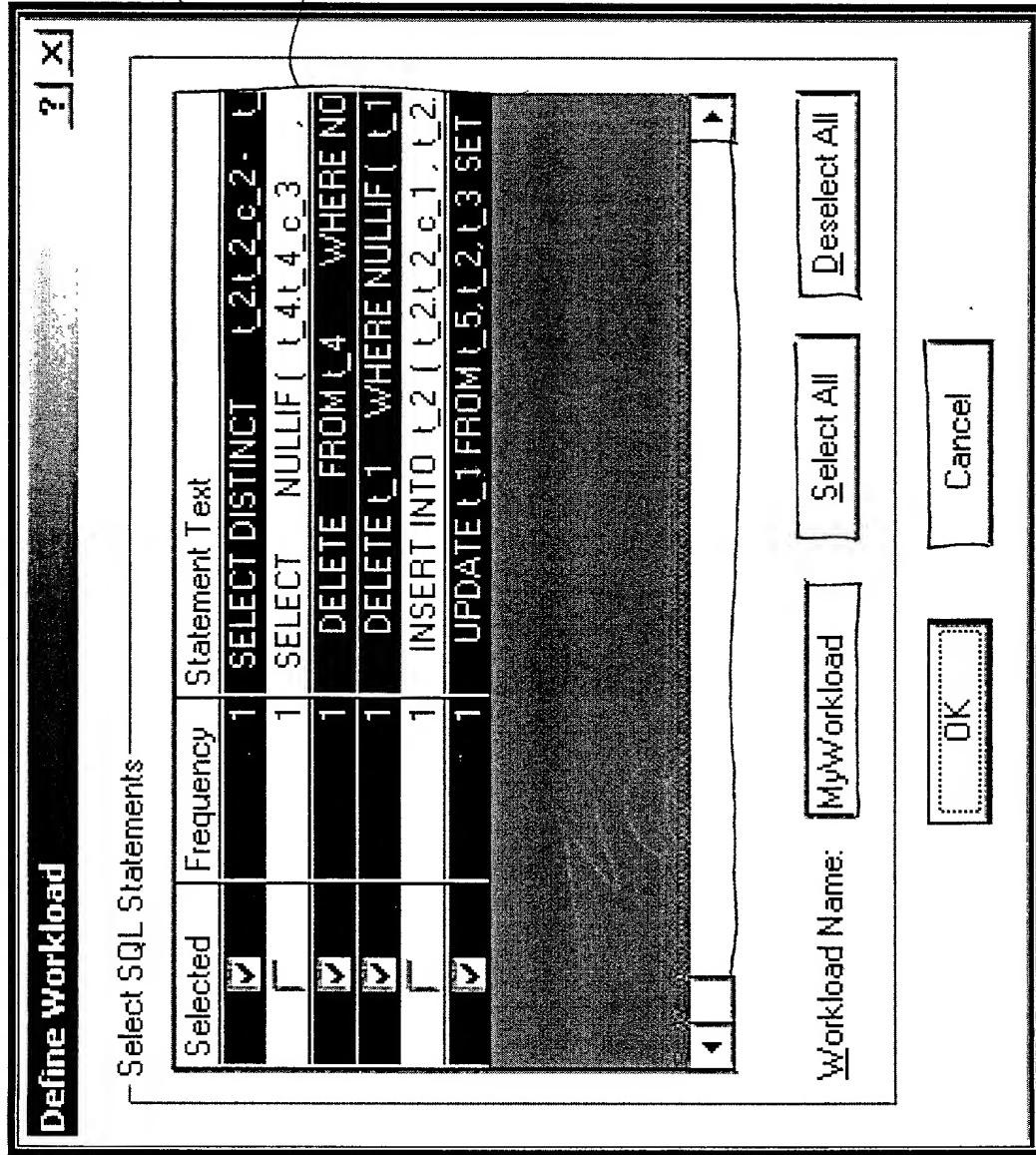


Fig. 25

Existing Workload

Workload Statements											
QCD Name:	Workload Name:										
TWizQCD	<input type="button" value="..."/>	<input type="button" value="MyWorkload"/> <input type="button" value="▼"/>									
<table border="1"> <thead> <tr> <th>State</th> <th>Frequi</th> <th>Statement Text</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1</td> <td>sel * from query...</td> </tr> <tr> <td>2</td> <td>1</td> <td>sel * from relation...</td> </tr> </tbody> </table>			State	Frequi	Statement Text	1	1	sel * from query...	2	1	sel * from relation...
State	Frequi	Statement Text									
1	1	sel * from query...									
2	1	sel * from relation...									

Workload Status

Recommend	Index Tag	Validated Sy	Validated Tii	Validated Qi	Recom
2	myindextag	deepika	7:43:670000	twizqcd	NONE
1	MyIndexTag	deepika	7:43:670000	twizqcd	NONE
2	muindextan	deepika	7:43:670000	twizqcd	NONE

Modify Options

Qcd Statements
 Query Text

F16. 26

Existing Workload

Workload Statements	Workload Name:																
<input type="text" value="TwizQCD"/>	<input type="text" value="MyWorkload"/>																
<table border="1"> <thead> <tr> <th>Select</th> <th>State</th> <th>Frequ</th> <th>Statement Text</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/></td> <td>1</td> <td>1</td> <td>sel * from query::</td> </tr> <tr> <td><input type="checkbox"/></td> <td>2</td> <td>1</td> <td>sel * from relation::</td> </tr> <tr> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Select	State	Frequ	Statement Text	<input checked="" type="checkbox"/>	1	1	sel * from query::	<input type="checkbox"/>	2	1	sel * from relation::	<input type="checkbox"/>			
Select	State	Frequ	Statement Text														
<input checked="" type="checkbox"/>	1	1	sel * from query::														
<input type="checkbox"/>	2	1	sel * from relation::														
<input type="checkbox"/>																	

552A

Workload Status

Recommend	Index Tag	Validated Sy	Validated Tii	Validated Qi	Recom
2	myindextag	deepika	7.43.670000	twizqcd	NONE
1	MyIndexTag	deepika	7.43.670000	twizqcd	NONE
2	muirdevard	deepika	7.43.670000	twizqcd	NONE
<input type="checkbox"/>					

Modify Options

Qcd Statements

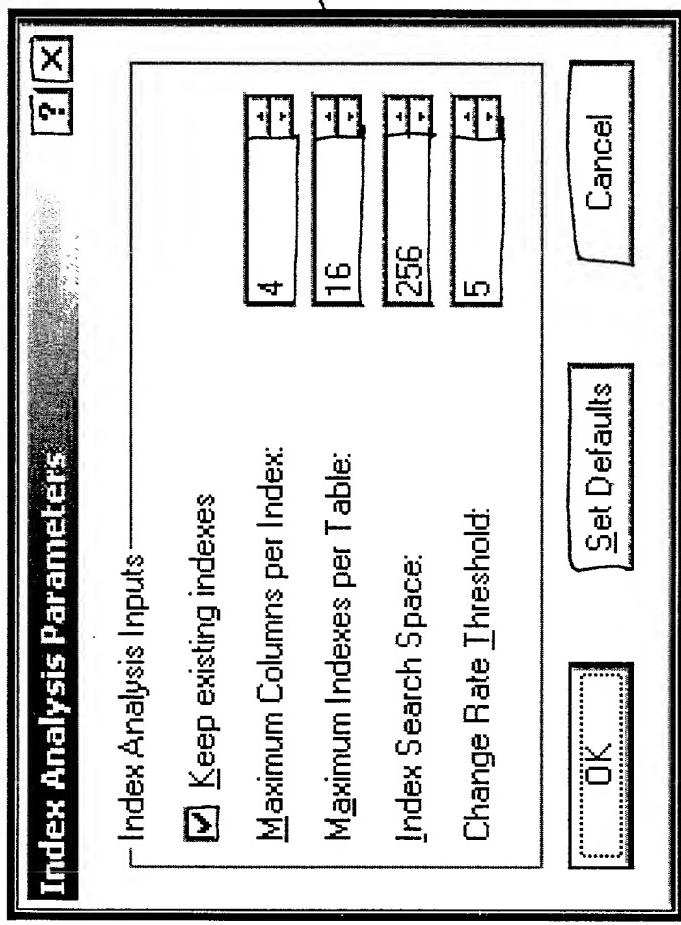
Query Text

New Workload Name:

558 {

559

FIG. 27



516. 28

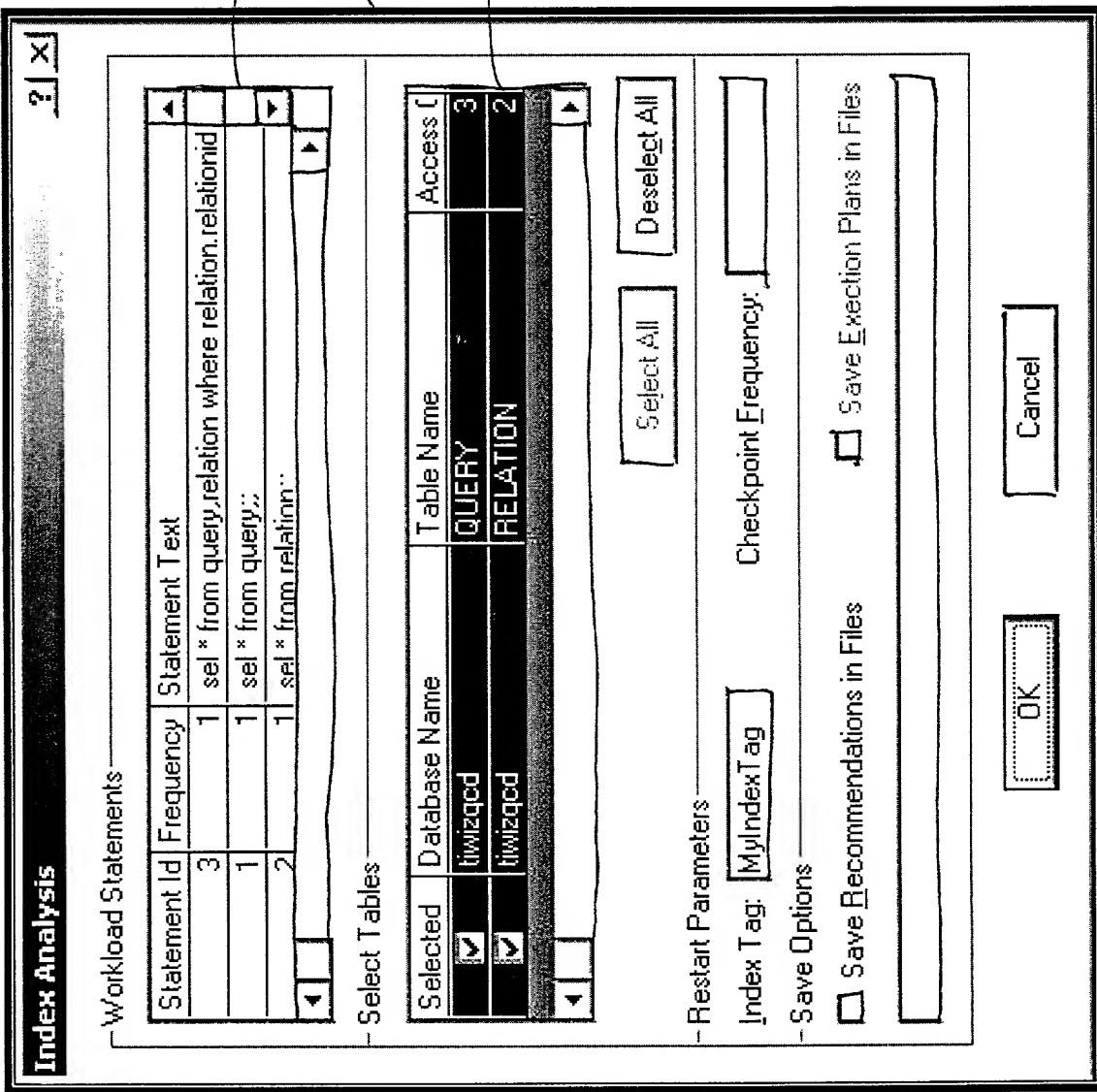


Fig. 29

Fig.

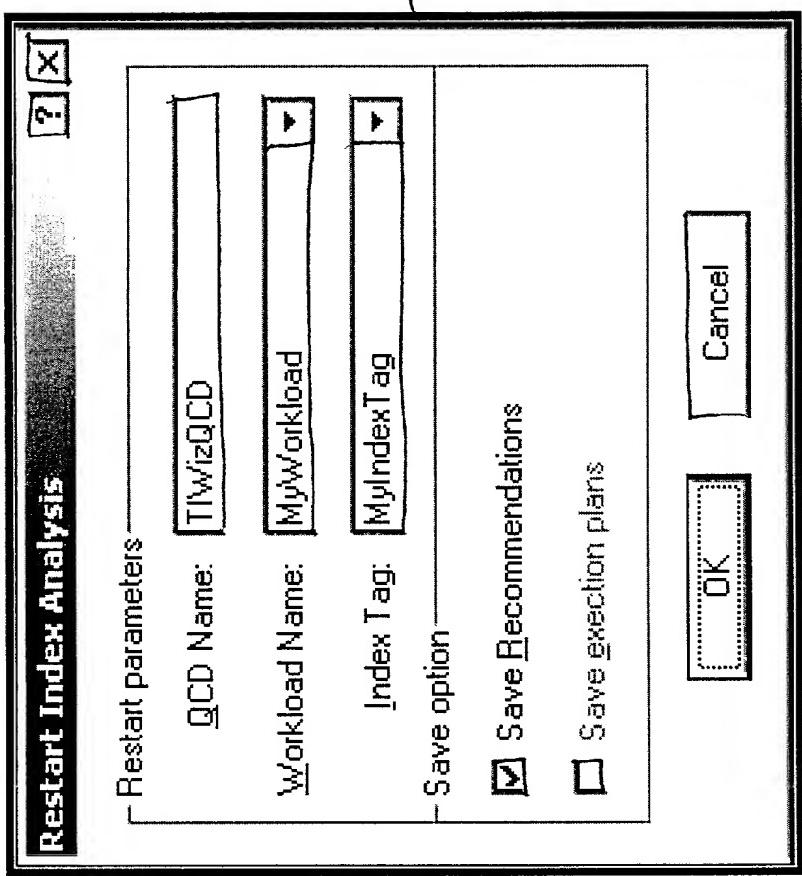


Fig. 30

What-If Analysis



Workload Details

QCD Name: ...

Workload Name: MyWorkload ▶

Index Tag: MyIndexTag ▶

Statement Freqency Statement Text

1	1	sel * from query..;
2	1	sel * from relation..;
3	1	sel * from query.relation where relation.relationid = query..;

592 ▶

594

596

590

Analysis

Selected DDL Statements:

CREATE INDEX index_5 (TableName) on Relation: Add ▶

Statement Text: COLLECT STATS Relation INDEX index_5

Rem INI View Statement New

COLLECT STATS Relation INDEX index_5 (TableName) ▶

Rem All CREATE INDEX index_5 (TableName) ▶

602

604

606

Browse... View Graph Analyze

Conclusion : An overall improvement of 31.34 in the performance of the system

608 ▶ Compare... Cancel OK

F16. - 31

Index Recommendation Report

QCD Name: tiwizqcd Workload Name: myworkload Index Tag: myindextag

Table Name	Index Tag	Index T...	Size(KB)	Time Esti...	Index DDL	Stats DDL
QUERY	MyIndextag	USI	10.00	59.00	CREATE INDEX ...	COLLECT STATS ...
RELATION	MyIndextag	USI	10.00	59.00	CREATE INDEX ...	COLLECT STATS ...
RELATION	MyIndextag	USI	10.00	59.00	CREATE INDEX ...	COLLECT STATS ...

622
626

Fig. 32

Existing Indexes Report

Existing Indexes Report

QCD Name: TIWizQCD Workload Name: myworkload

Index Tag: MyIndexTag

Table Name	Index Name	Index Type	Columns
QUERY	PK_QueryID	P	QueryID
RELATION	PK_RelationKey	P	RelationKey

630 632

F16. 33

Query Cost Analysis Report

Query Cost Analysis Report

QCD Name: TiWizQCD

Workload Name: myworkload

Index Tag: MyIndexTag

Query Type	Cost with existing i...	Cost with recommended...	Percentage Change	Query Text
SELECT	100.00	50.00	100.00	sel * from query,relation w
SELECT	100.00	50.00	100.00	sel * from query::
SELECT	100.00	50.00	100.00	sel * from relation::

F16. 34

642

640

Update Cost Report

Update Cost Report

QCD Name: MyTextQCD

Workload Name: MyWorkload

Index Tag: Index1

Table Name	Indexes	Update Cost
No rows returned		

650 652

F16. 35

Disk Space Analysis Report

Disk Space Analysis Report

QCD Name:TlWizQCD Workload Name:myworkload

Index Tag:MyIndexTag

Table Name	Index Name	Size(KB)
QUERY	MyIndextag	10.00
RELATION	MyIndextag	10.00
RELATION	MyIndextag	10.00

660 662

F16. 34

Table Usage Report

QCD Name: TiWizQCD Workload Name: myworkload
Index Tag: MyIndexTag

Table Name	Access Count	Statement Text
QUERY	1	sel * from query,relation where relation.relationid = query.queryid and query.qu
RELATION	1	sel * from query,relation where relation.relationid = query.queryid and query.qu
QUERY	1	sel * from query;
RELATION	1	sel * from relation..

F16, 37

} 690

672

Workload Analysis Report

QCD Name: TiWizQCD Workload Name: myworkload
Workload Analysis Report

Statement	Cost	Relative...	Table Name...	Columns	Columns involved...	Statement T
SELECT...	10...	3.70	RELATION	RelationKey, Cardinality, Geogl...	?	sel * from q
SELECT...	10...	3.70	QUERY	QueryText, QUERYNAME, Que...	QueryID, QUER...	sel * from q
SELECT...	10...	3.70	QUERY	UDB_KEY, QUERYNAME, Dat...	?	sel * from q
SELECT...	10...	3.70	RELATION	SortInfo, VIEWNAME, UDB_KE...	?	sel * from re

682

680

F16, 3Y

F16. 39
690 692

Summary Report

QCD Name: TIWizQCD Workload Name: myworkload Index Tag: MyIndexTag

Table Name	Index Name	Index DDL	Stats DDL
QUERY	MyIndextag	CREATE INDEX index_3 (QueryText) on Query:	COLLECT STATS Query INC
RELATION	MyIndextag	CREATE INDEX index_4 (name) on Relation:	COLLECT STATS Relation II
RELATION	MyIndextag	CREATE INDEX index_4 (name,TableName) o...	COLLECT STATS Relation II

Table Scan Report

Table Scan Report

QCD Name: twizqcd Workload Name: myworkload

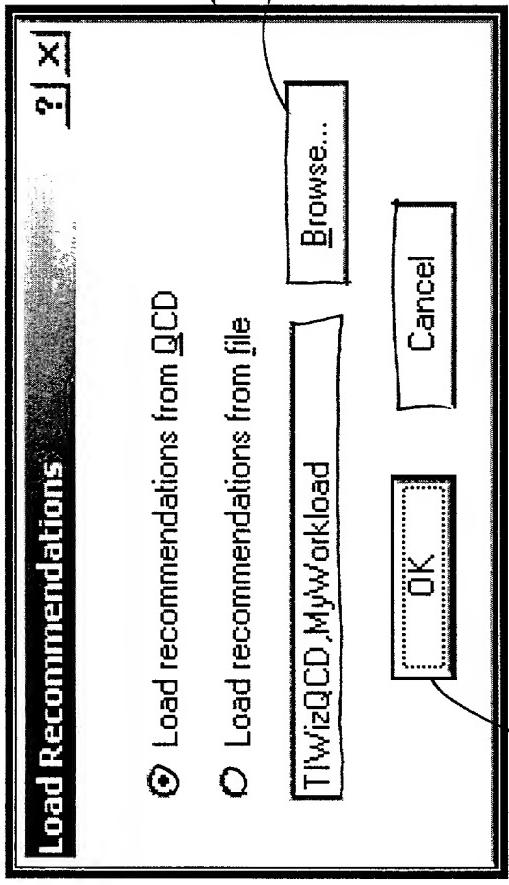
Owner	Table Name	Cardinality	AMPS Retrieves...	Geograph...	Statement Text
twizqcd	QUERY	45.00	All AMP Retrieve	built locally	sel * from query.relation where query.que
twizqcd	QUERY	45.00	All AMP Retrieve	built locally	sel * from query.relation ,workload where
twizqcd	QUERY	45.00	All AMP Retrieve	built locally	sel * from query.relation ,workload ::
twizqcd	RELATION	282.00	All AMP Retrieve	built locally	sel * from query.relation where query.que
twizqcd	RELATION	282.00	All AMP Retrieve	built locally	sel * from query.relation ,workload where
twizqcd	RELATION	282.00	All AMP Retrieve	built locally	sel * from query.relation ,workload ::
twizqcd	WORKLOAD	2.00	Single AMP Retr...	built locally	sel * from query.relation ,workload where
twizqcd	WORKLOAD	2.00	All AMP Retrieve	built locally	sel * from query.relation ,workload ::

F16. 40

700
702

F 16. 41

Workload Clean Up																															
Workload Statements QCD Name: TwizQCD <input type="button" value="..."/> Workload Name: MyWorkload <input type="button" value="..."/>																															
<table border="1"> <thead> <tr> <th>State</th> <th>Freq</th> <th>Statement Text</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1</td> <td>sel * from query;</td> </tr> <tr> <td>2</td> <td>1</td> <td>sel * from relation;</td> </tr> <tr> <td colspan="2"></td> <td><input type="button" value="Delete"/></td> </tr> </tbody> </table>		State	Freq	Statement Text	1	1	sel * from query;	2	1	sel * from relation;			<input type="button" value="Delete"/>																		
State	Freq	Statement Text																													
1	1	sel * from query;																													
2	1	sel * from relation;																													
		<input type="button" value="Delete"/>																													
Workload Status <table border="1"> <thead> <tr> <th>Select</th> <th>Recommend</th> <th>Index Tag</th> <th>Validated Sy</th> <th>Validated Tii</th> <th>Validated Qi</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/></td> <td>2</td> <td>myindextag</td> <td>deepika</td> <td>7.43 670000</td> <td>twizqcd</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>1</td> <td>MyIndexTag</td> <td>deepika</td> <td>7.43 670000</td> <td>twizqcd</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>2</td> <td>minindexhead</td> <td>deepika</td> <td>7.43 670000</td> <td>twizqcd</td> </tr> <tr> <td colspan="6"><input type="button" value="Delete"/></td> </tr> </tbody> </table>		Select	Recommend	Index Tag	Validated Sy	Validated Tii	Validated Qi	<input checked="" type="checkbox"/>	2	myindextag	deepika	7.43 670000	twizqcd	<input checked="" type="checkbox"/>	1	MyIndexTag	deepika	7.43 670000	twizqcd	<input checked="" type="checkbox"/>	2	minindexhead	deepika	7.43 670000	twizqcd	<input type="button" value="Delete"/>					
Select	Recommend	Index Tag	Validated Sy	Validated Tii	Validated Qi																										
<input checked="" type="checkbox"/>	2	myindextag	deepika	7.43 670000	twizqcd																										
<input checked="" type="checkbox"/>	1	MyIndexTag	deepika	7.43 670000	twizqcd																										
<input checked="" type="checkbox"/>	2	minindexhead	deepika	7.43 670000	twizqcd																										
<input type="button" value="Delete"/>																															
Delete Options <input type="checkbox"/> Delete Analysis <input checked="" type="checkbox"/> Delete Workload <input type="checkbox"/> Delete Plans <input type="button" value="Delete"/>																															
<input type="button" value="OK"/> <input type="button" value="Cancel"/>																															



⑥ Load recommendations from QCD

⑦ Load recommendations from file

TWizQCD.MyWorkload

Browse...

OK

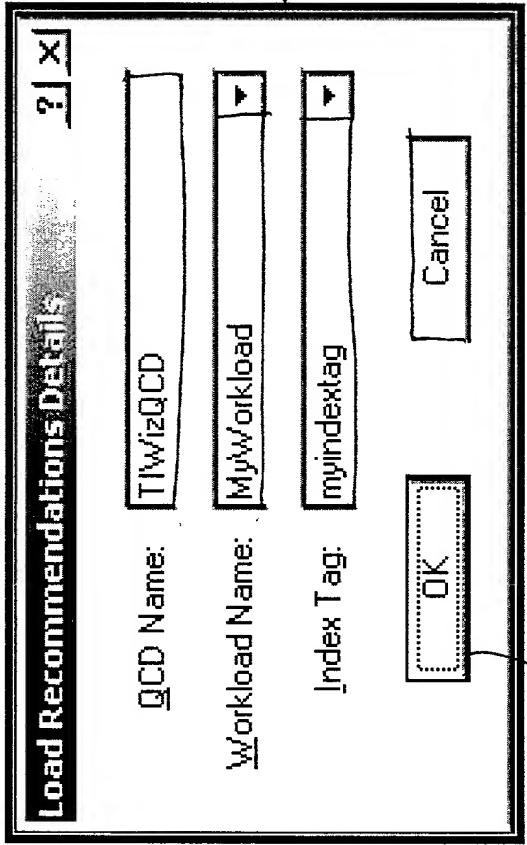
Cancel

734

F16, 42

730

732



742

Fig. 43

746

742

Index Validation

Validate Indexes Validate on another system

Select indexes to be validated:

Seq	Table	Index	Index	Columns	Index DDL
1	QUE1	MyInt	QueryText	name	CREATE INDEX index_3 (QueryText)
2	REL1	MyInt	name		CREATE INDEX index_4 (name)
3	REL1	MultiInt	Table Name		CREATE INDEX index_4 (name)

Validation Results

Table Name	Index Name	% Sample on which statistics were collected
QUERY		10
RELATION		10
RELATION		10

Conclusion: An overall improvement of 38.24 in the performance of the system

Compare Options:

752

756

758

716. 44

760

762

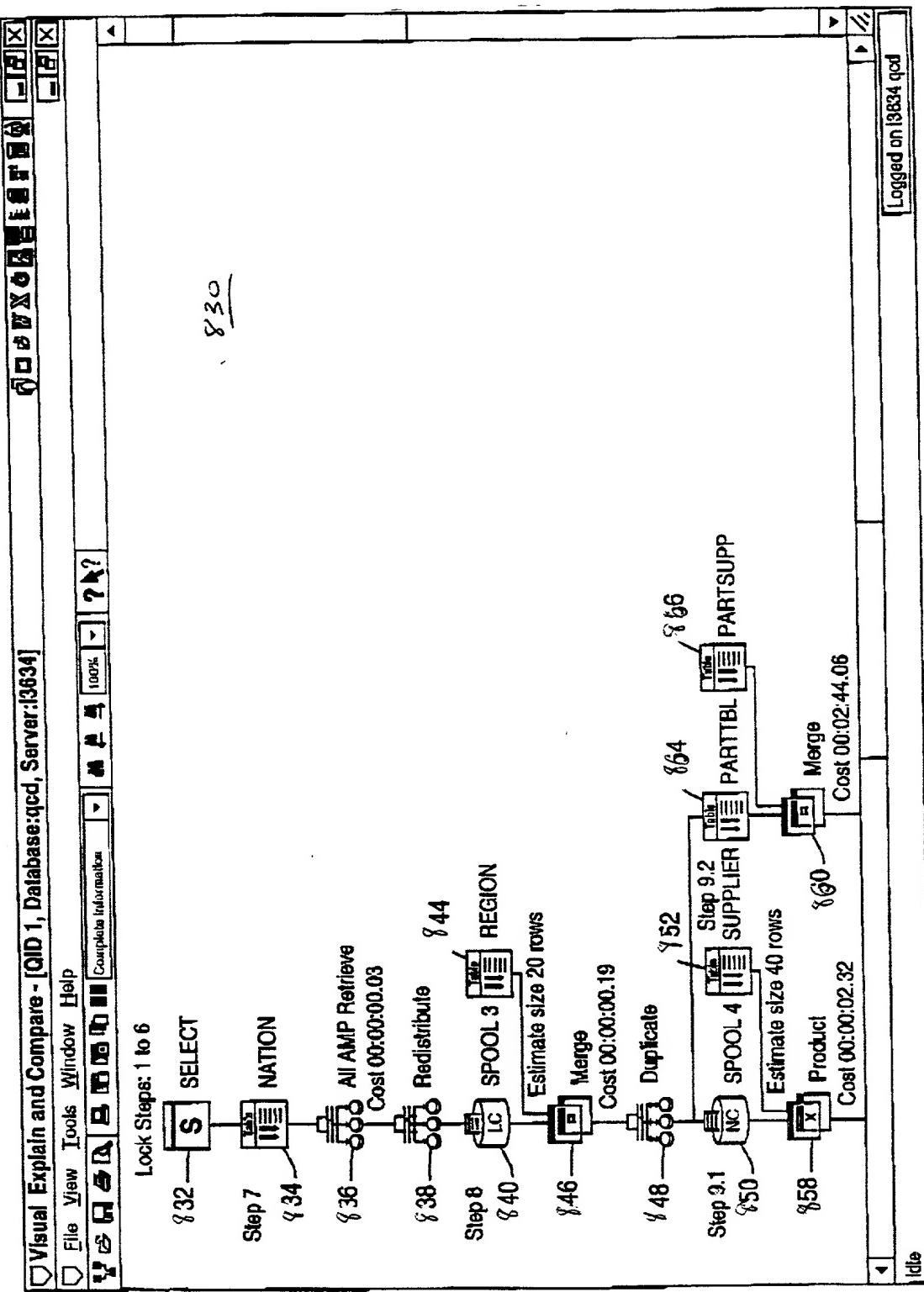


FIG. 45

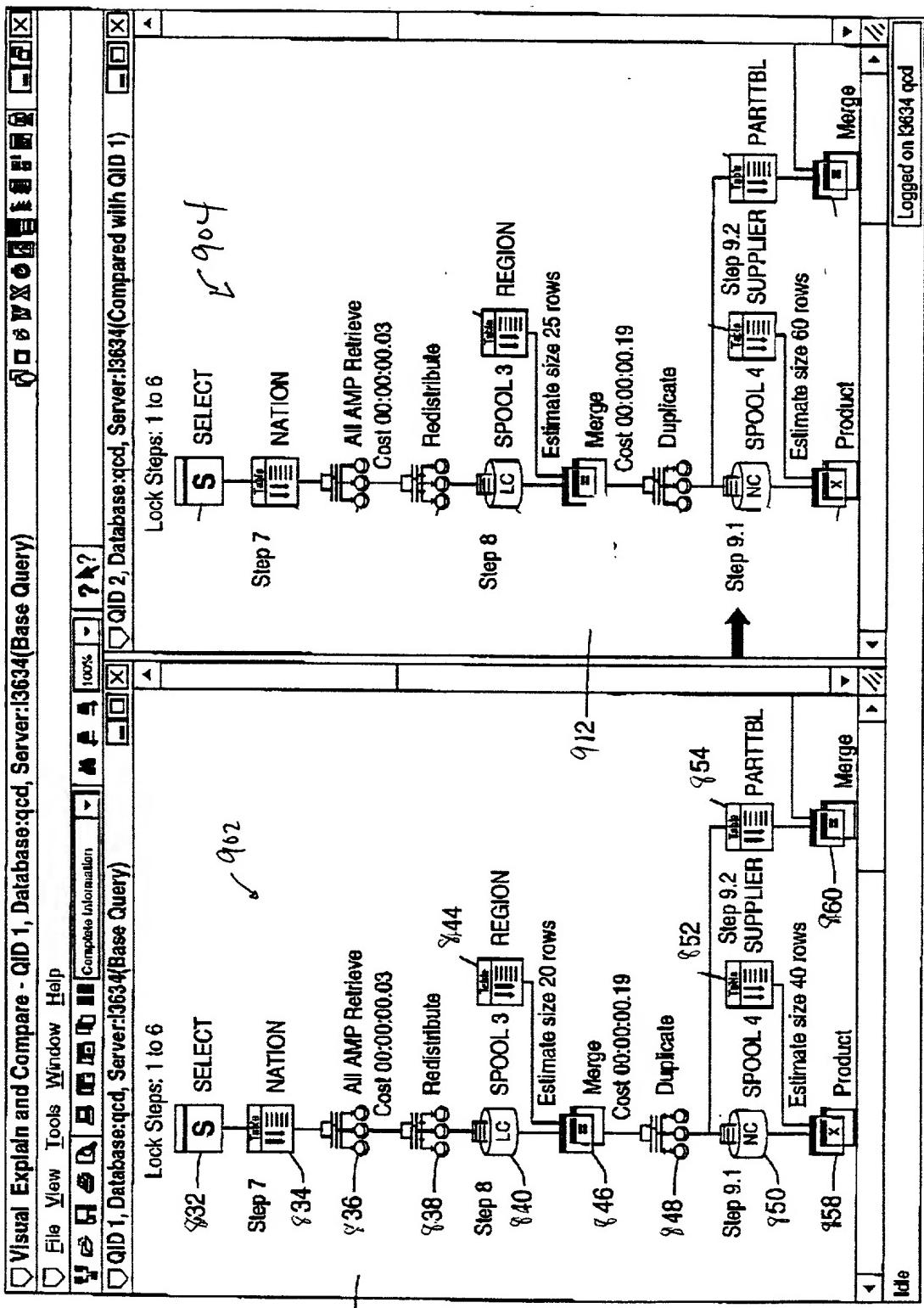


FIG. 46

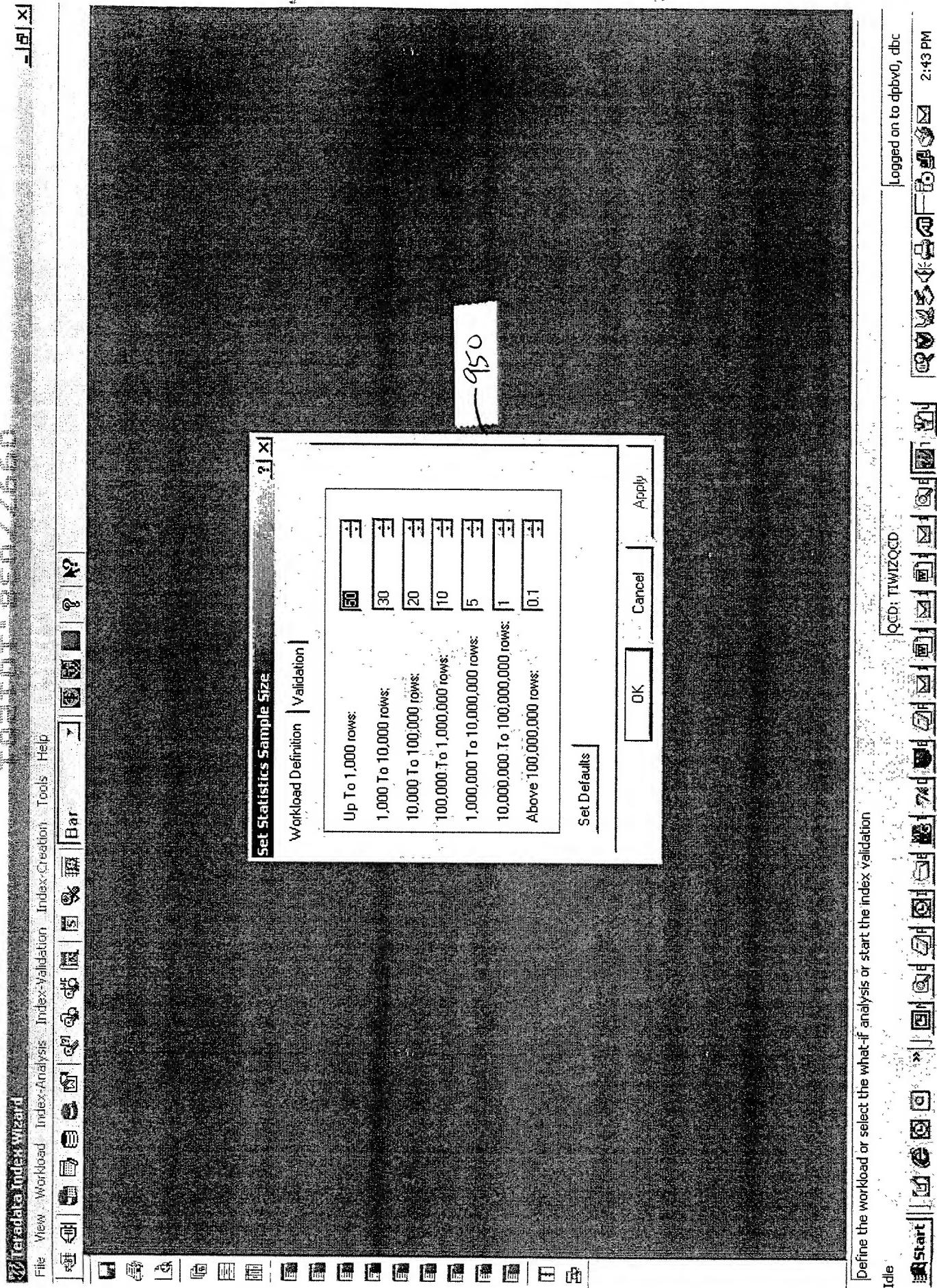


Fig. 47